DAKOTA ACCESS PIPELINE PROJECT

NORTH DAKOTA PUBLIC SERVICE COMMISSION COMBINED APPLICATION FOR CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT

Dakota Access, LLC
1300 Main Street
Houston, TX 77002

Prepared for:

North Dakota Public Service Commission
600 East Boulevard, Department 408
Bismarck, ND 58505

December 2014

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA

In the Matter of the Application of Dakota Access LLC for a Certificate of Site Compatibility and Route Permit for the Dakota Access Pipeline Project in Mountrail, Williams, McKenzie, Dunn, Mercer, Morton and Emmons Counties, North Dakota	)	Case No. PU-14-___

COMBINED APPLICATION OF DAKOTA ACCESS LLC FOR A WAIVER OR REDUCTION OF PROCEDURES AND TIME SCHEDULES AND FOR A CORRIDOR CERTIFICATE AND ROUTE PERMIT

Applicant Dakota Access LLC ("Dakota Access") whose address for purposes of this Application is 1300 Main Street, Houston, Texas 77002, pursuant to the Energy Conversion and Transmission Facility Siting Act, codified at North Dakota Century Code Chapter 49-22 ("Act"), hereby submits this Combined Application For a Waiver or Reduction of Procedures and Time Schedules and For a Corridor Certificate and Route Permit ("Application").

Dakota Access requests that the North Dakota Public Service Commission ("Commission") waive and/or reduce procedures and time schedules required by the Act or in the Commission's regulations set forth in Title 69-06 of the North Dakota Administrative Code, to accomplish the purposes as requested herein. These include, but are not limited to: (1) waive, pursuant to North Dakota Century Code §§ 49-22-07.2, 49-22-13, and North Dakota Administrative Code § 69-06-01-02 and Chapter 69-06-06; provisions of North Dakota Century

Code §§ 49-22-08(5), 49-22-08.1(5), 49-22-13, and North Dakota Administrative Code § 69-06-01-02 which require separate filings of such applications, separate notices of such applications, separate hearings on such applications, separate orders on such application; and certain procedures and time schedules as set forth in said statutes and rules; (2) allow combination of the certificate of corridor compatibility application and route permit application into one application; (3) acknowledge the study area of one mile centered on the pipeline and around the perimeter of the associated facilities including all proposed and alternate terminal locations; and approve a corridor of 400 feet in width; (4) hold one combined public hearing on this Application; (5) find that the proposed facilities are of such design, length, location and purpose that they will produce minimal adverse affects; and (6) designate and approve the requested facilities as identified in this Application and issue the appropriate corridor certificate and route permit.

The Commission's application guidelines for waiver of procedures and time schedules require the description of the facility, the need for the facility, the cost of the facility and justification for each provision of the Act for which Dakota Access is requesting a waiver, together with evidence that the project will produce minimal adverse effects or that a demonstrable emergency exists. As set forth in this Application, and summarized below, each of Dakota Access's requests for waivers and/or reductions of procedures and time schedules and the issuance of a corridor certificate and route permit are justified as the proposed facilities are of such design, length, location and purpose that they will produce minimal adverse effects, and that the urgent demand for additional pipeline capacity to deliver crude oil produced in the Williston Basin of North Dakota to markets and refineries in the United States requires construction at the earliest possible date.

DESCRIPTION

Dakota Access is proposing to construct approximately 1,150 miles of new pipeline and associated facilities, being located in North Dakota, South Dakota, Iowa and Illinois. The project will be referred to as the Dakota Access Project ("Project"). The Project in North Dakota consists of two main underground pipeline components, being the Supply Line and the Mainline, six tank/pump stations, and minor above ground appurtenances such as mainline valves.

The 148-mile long Supply Line will commence with a new 12-inch diameter pipeline at a proposed tank terminal near Stanley, North Dakota, extend to the west and then south around Lake Sakakawea, ultimately reaching its terminal at Johnson Corner to the east of Watford City, North Dakota. The diameter of the pipeline increases incrementally at designated tank terminals from 12 inches to 20, 24 and ultimately 30 inches.

Six tank terminals are proposed throughout the link of the Supply Line, including the pipeline connection point near Stanley, North Dakota, and subsequent tank terminals located south of Tioga, near Epping, near Trenton, near Watford City and at Johnson Corner.

At the discharge site of the Johnson Corner tank terminal and pump station, the 30-inch diameter Mainline commences and heads into a generally southeast direction. The Mainline portion of the Project is approximately 210 miles long before exiting the state in Emmons County, North Dakota.

NEED

The purpose of the Dakota Access Project is to address the current demand for pipeline export capacity out of gathering hubs within the Bakken and Three Forks production areas, as well as to provide the foundation for timely future expansions, to meet the transportation needs

of the Williston Basin producers. The Project will provide the new pipeline export capacity necessary to move current and forecasted Bakken and Three Forks production volumes beginning at Stanley, North Dakota to Patoka, Illinois. From Patoka, the crude oil will be transported by other pipelines to refineries located in the Midwest and the Gulf Coast, where 80% of the United States refining capabilities exist to further our Country's goal of energy independence.

COST

The total cost of constructing the entire Dakota Access Project is estimated at $3.78 billion, with the estimated cost of the North Dakota portion of the Project being $1.41 billion.

JUSTIFICATION

The environmental and cultural resource studies and reports which have been commissioned by Dakota Access for this Project demonstrate that there will be minimal adverse effects by construction. As a result, Dakota Access hereby submits that there is substantial justification as set forth under the Need section above for the requested waivers and/or reduction of time schedules and procedures as the Project will produce minimal adverse effects.

Dakota Access respectfully requests the Commission to grant the requested waivers and/or reduction of procedures and time schedules; and to render an expeditious decision approving the requested corridor certificate and route permit.

Dated this 17th day of December, 2014.

Respectfully submitted,

DAKOTA ACCESS LLC

CROWLEY FLECK PLLP
Attorneys for Applicant
100 West Broadway, Suite 250
P.O. Box 2798
Bismarck, North Dakota 58502

By _____
BRIAN R. BJELLA (#03549)

STATE OF NORTH DAKOTA)
)
COUNTY OF BURLEIGH)

Brian R. Bjella, being first duly sworn on oath, deposes and says that he is the attorney for the applicant herein named, that he has read the above and foregoing application, knows the contents thereof, and that the same is true to the best of this affiant's knowledge, information, and belief.

_____
BRIAN R. BJELLA

Subscribed and sworn to before me this 17th day of December, 2014.

(SEAL) BETH WALD
Notary Public
State of North Dakota
My Commission Expires Nov. 28, 2020

_____
Notary Public
Burleigh County, North Dakota
My Commission Expires:

TABLE OF CONTENTS

EXECUTIVE SUMMARY

COMBINED CORRIDOR COMPATIBILITY AND ROUTE PERMIT APPLICATION CHECKLIST

AUTHORITY	DESCRIPTION	SECTION
Chapter 49-22	***CENTURY CODE – Title 49 ENERGY CONVERSION AND TRANSMISSION FACILITY***	
49-22-08	Application for a Certificate for a Corridor (CC)	
1.a	Description of size and type of facility	1.0, 2.1
1.b	Summary of any studies of environmental impacts	5.0
1.c	Need for the facility	2.2
1.d	Site for energy conversion facility	N/A
1.e	Preferred transmission (pipeline) corridor	2.19, Exhibit A
1.f	Analysis of merits and detriments of facility location	3.1
1.g	Mitigating measures	10.0
1.h	Corridor evaluation pursuant to 49-22-09 and 49-22-05.1	8.0, 9.0
1.i	Other relevant information	9.0
49-22-08.1	Application for Route Permit (RP)	
1.a	Description of size and type of facility	1.0, 2.1
1.b	Description of the location	1.0, 2.1, 2.11
1.c	Route evaluation relative to 49-22-09 and 49-22-05.1	8.0, 9.0
1.d	Mitigating measures	10.0
1.e	Right-of-way preparation, construction, and reclamation	2.20, Exhibit C
1.f	Statement identifying how: 1. Landowners informed of right-of-way acquisition 2. How landowners will be compensated	2.21
1.g	Other relevant information	9.0
49-22-09	Factors to be considered in evaluating corridor and route applications	
1	Research and investigation into effects of the project on public health, welfare, natural resources, and the environment	5.0, 8.3.10, 8.3.11, 9.2
2	Effects of transmission technology and design to minimize adverse effects	9.2
3	Potential beneficial uses of waste energy from energy conversion facility	9.3
4	Unavoidable adverse direct and indirect environmental effects	9.4
5	Corridor or route alternatives developed during the hearing which minimize adverse effects	9.5
6	Irreversible and irretrievable commitments of natural resources if designated	9.6
7	Direct and indirect economic impacts of the facility	9.7

AUTHORITY	DESCRIPTION	SECTION
8	Existing plans for other developments at or in the vicinity	9.8
9	Effect of project on scenic areas, historic sites and structures, paleontological and archaeological sites	8.2
10	Effect of route on unique biological areas	5.0
11	Problems raised by federal, state, or local entities	6.0, 9.16
	ADMINISTRATIVE CODE - ARTICLE 69-06 ENERGY CONVERSION AND TRANSMISSION FACILITY SITING	
69-06-05-01	Application for a Transmission Facility Permit (Corridor Certificate)	
2.a.(1)	Type of facility proposed	1.0
2.a.(2)	Purpose of facility	2.2
2.a.(3)	Technology to be deployed	2.5
2.a.(4)	Type of product to be transmitted	2.6
2.a.(5)	Source of product being transmitted	2.7
2.a.(6)	Final destination of product being transmitted	2.8
2.a.(7)	Size and design detail and any alternative size and design	1.0, 2.1, 3.1, Exhibits A & B
2.a.(7)(a)	The width of right-of-way	2.9
2.a.(7)(b)	The approximate length of facility	2.10
2.a.(7)(c)	The estimated span length for electric facilities	N/A
2.a.(7)(d)	The anticipated type of structure for electric facilities	N/A
2.a.(7)(e)	The voltage for electric facilities	N/A
2.a.(7)(f)	The requirement for and general location of any new associated facilities	2.11
2.a.(7)(g)	The estimated distance between pipeline surface structures	2.12
2.a.(7)(h)	The pipe size	2.13
2.a.(7)(i)	The maximum design for pipeline operating pressure and temperature	2.14
2.a.(7)(j)	The maximum design pipeline flow rate	2.15
2.a.(7)(k)	The number and general location of compressor or pumping stations	2.16
2.b.	Time schedule	4.0
2.b.(1)	Obtaining the certificate of corridor compatibility	4.1
2.b.(2)	Obtaining the route permit	4.2
2.b.(3)	Completing right-of-way acquisition	4.3
2.b.(4)	Starting construction	4.4
2.b.(5)	Completing construction	4.5
2.b.(6)	Testing operations	4.6
2.b.(7)	Commencing operations	4.7
2.c.	A copy of each evaluative study or assessment of the environmental impact of the proposed facility submitted to the agencies listed in section 69-06-01-05 and each response received	5.0, Exhibits D & E
2.d.	Need for the facility	2.2
2.e.	Description of alternatives	3.1
2.f.	Corridor width	5.0

AUTHORITY	DESCRIPTION	SECTION
2.g.	Study area to enable the Commission to evaluate the factors in the Century Code section 49-22-09;	5.0
2.h.	Discussion of factors in Century Code 49-22-09 to aid Commission's evaluation	8.0, 9.0
2.i.	A discussion of the applicant's policies and commitments to limit the environmental impact of its facilities, including copies of the board resolutions and management directives	7.0
2.j.	Map of criteria that led to route location	Exhibit A
2.k.	Discuss relative value of each criteria and how the location was selected; how operation will affect criteria	8.0
2.l.	Mitigating measures	10.0
2.m.	Qualifications of each person involved in location study	12.0
2.n.	Map identifying criteria that led to the route location and new facilities	Exhibit A
2.o.	8 1/2 X 11 black and white map suitable for newspaper publication	Separate
2.p.	Discussion of present and future natural resource development in the area	11.0
2.q.	Maps and GIS data meeting PSC requirements	Exhibit A
69-06-06-01	Application for Waiver of Procedures and Time Schedules	--
69-06-08-02	Transmission Facility Corridor and Route Criteria	--
1	Exclusion areas	8.1
1.a.	Designated or registered national: parks, sites , landmarks, monuments, wilderness	8.1.1
1.b.	Designated or registered state: parks, sites, monuments, archeological sites, nature preserves	8.1.2
1.c.	County parks and recreational areas, municipal parks, parks owned or administered by other governmental subdivisions	8.1.3
1.d.	Areas of critical habitat	8.1.4
1.e.	Areas where unique or rare species would be irreversibly damaged	8.1.5
1.f.	Area within one thousand two hundred feet of ICBM facility	8.1.6
1.g.	Areas within thirty feet of direct line of ICBM launch facilities	8.1.7
2	Avoidance areas	8.2
2.a.	Designated or registered national: historic districts, wildlife areas, wild, scenic or recreational rivers, wildlife refuges, grasslands	8.2.1
2.b	Designated or registered state: wild, scenic, recreational rivers, game refuges, game management areas, forest management lands, grasslands	8.2.2
2.c.	Historical resources which are not specifically designated as exclusion or avoidance areas	8.2.3
2.d.	Areas which are geologically unstable	8.2.4
2.e.	Within five hundred feet of a residence, school, or place of business	8.2.5
2.f.	Reservoirs and municipal water supplies	8.2.6

AUTHORITY	DESCRIPTION	SECTION
2.g.	Water sources for organized rural water districts	8.2.7
2.h.	Irrigated land (does not apply to underground transmission facility)	8.2.8
2.i.	Area of recreational significance but not designated exclusion areas	8.2.9
3	Selection criteria. Impact on:	8.3
3.a.(1)	Agricultural production	8.3.1
3.a.(2)	Family farms and ranches	8.3.2
3.a.(3)	Land economically suitable for irrigation	8.3.3
3.a.(4)	Surface drainage patterns and ground water flow patterns	8.3.4
3.b.(1)	Sound sensitive land uses	8.3.5
3.b.(2)	Visual effect on adjacent area	8.3.6
3.b.(3)	Extractive and storage resources	8.3.7
3.b.(4)	Wetlands, woodlands, and wooded areas	8.3.8
3.b.(5)	Radio and tv reception and other communication or electronic facilities	8.3.9
3.b.(6)	Human health and safety	8.3.10
3.b.(7)	Animal health and safety	8.3.11
3.b.(8)	Plant life	8.3.12
4	Policy criteria	7.0
4.a.	Location and design	7.1
4.b.	Training and utilization of instate labor	7.2
4.c.	Economies of construction and operation	7.3
4.d.	Use of citizen coordinating committees	7.4
4.e.	Commitment of portion of transmitted product for use in state	7.5
4.f.	Labor relations	7.6
4.g.	Coordination of facilities	7.8
4.h.	Monitoring of impacts	7.9
4.i.	Using existing and proposed rights of way and corridors	7.10
4.j.	Other existing or proposed transmission facilities	7.11

ACRONYMS AND ABBREVIATIONS

BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
BOR	Bureau of Reclamation
bpd	barrels per day
COE	U.S. Army Corps of Engineers
Commission	North Dakota Public Service Commission
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
Dakota Access	Dakota Access, LLC
DAPL Project	Dakota Access Pipeline Project
DOD	Department of Defense
ECP	Environmental Construction Plan
EMT	emergency medical technician
F	Fahrenheit
FRP	Facility Response Plan
FSA	U.S. Department of Agriculture Farm Service Agency
g	gravitational acceleration
GIS	Geographic Information System
GRP	Grassland Reserve Program
HCA	High Consequence Area
HDD	horizontal directional drilling
ICBM	intercontinental ballistic missile
IMP	Integrity Management Program
MBTA	Migratory Bird Treaty Act
NRCS	Natural Resource Conservation Service
NDGF	North Dakota Game and Fish Department
NDPDES	North Dakota Pollutant Discharge Elimination System
NDSHPO	North Dakota State Historic Preservation Office
NPS	U.S. National Park Service
NRHP	National Register of Historic Places

NWP	Nationwide Permit
PHMSA	Pipeline and Hazardous Materials Safety Administration
psi	pounds per square inch
ROW	right-of-way
SCADA	Supervisory Control and Data Acquisition
SSURGO2	Soil Survey Geographic Database 2
TAT	Three Affiliated Tribes
THPO	Tribal Historic Preservation Office
UDP	Unanticipated Discovery Plan
USAF Cable Affairs	U.S. Air Force Cable Affairs office
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WHPA	Well Head Protection Areas
WRP	Wetland Reserve Program

LIST OF EXHIBITS

INTRODUCTION

Dakota Access, LLC (Dakota Access) submits this Combined Corridor Compatibility and Route Permit Application to the North Dakota Public Service Commission (Commission). Additionally, Dakota Access is also submitting the enclosed Combined Application For a Waiver or Reduction of Procedures and Time Schedules (located prior to the Executive Summary within this document).

Dakota Access is proposing to construct a new crude oil pipeline that will provide transportation service from points of origin in the Bakken/Three Forks play in North Dakota through portions of South Dakota and Iowa to a terminus in Patoka, Illinois (Figures 1-1, 1-2). The operator of the project is DAPL-ETCO Operations Management, LLC. The proposed pipeline is referred to as the Dakota Access Pipeline Project (DAPL Project).

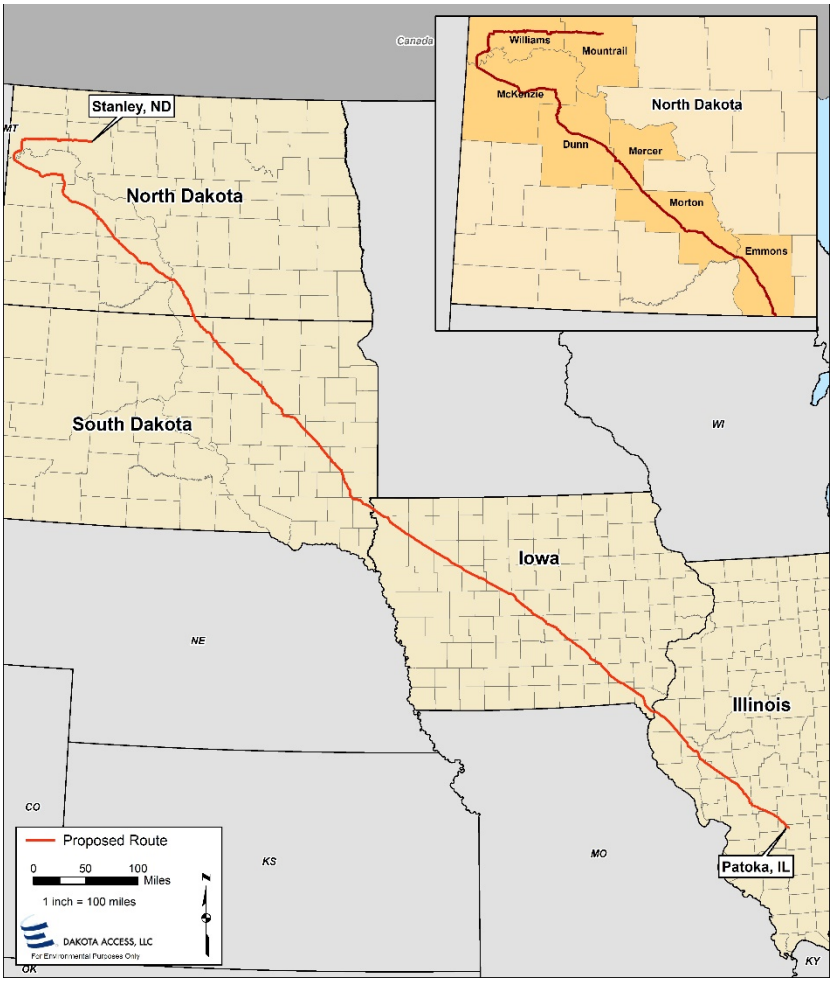

Figure 1-1: DAPL Project Route in its entirety

The DAPL Project will enable domestically produced light sweet crude oil from North Dakota to reach major U.S. refining markets in a more direct, cost-effective, safe, and environmentally responsible manner. It will reduce the current use of rail and truck transportation with an initial transport of approximately 450,000 barrels per day (bpd) and a maximum capacity of 570,000 bpd or greater based on customer demand.

In accordance with Chapter 49-22 of the North Dakota Century Code, Section 69-06-08-02 of the North Dakota Administrative Code, and the Commission's Energy Conversion and Transmission Facility Siting Guidelines, Dakota Access provides the information herein to support its request for a Certificate of Corridor Compatibility and Route Permit for the DAPL Project.

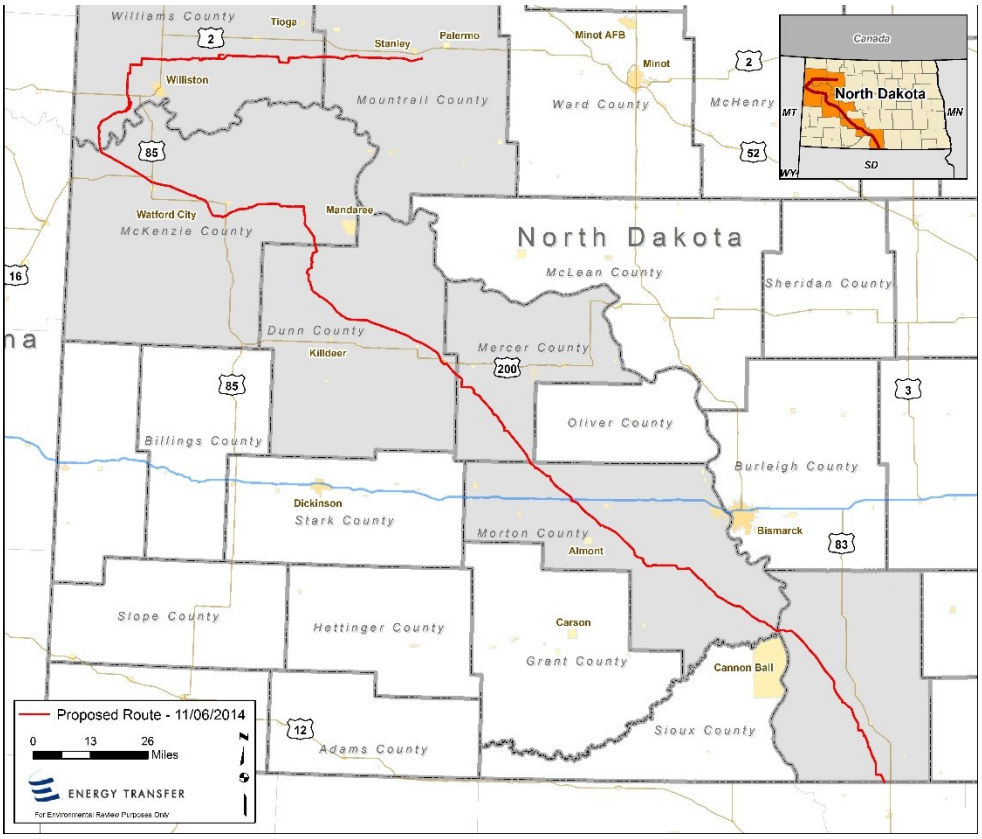

Figure 1-2: DAPL Project Route in North Dakota

1.0 SIZE AND TYPE OF FACILITY

The proposed DAPL Project is comprised of an underground pipeline and associated tank terminals/pump stations for the storage and transport of crude petroleum. In North Dakota, the DAPL Project consists of two main underground pipeline components (Supply Line and Mainline), six tank/pump stations, and minor aboveground appurtenances (e.g. main line valves). The 148-mile long Supply Line route will commence with a new 12-inch diameter pipeline at a proposed tank terminal near Stanley, extend to the west and then south around Lake Sakakawea, ultimately reaching its terminus at Johnson Corner to the east of Watford City (Figure 1-3). The diameter of the pipeline increases incrementally at designated tank terminals from 12 inches to 20, 24, and ultimately, 30 inches. The DAPL Project will provide shippers access to approximately 450,000 bpd of transportation capacity (with an ultimate capacity of 570,000 bpd or greater, depending on customer demand).

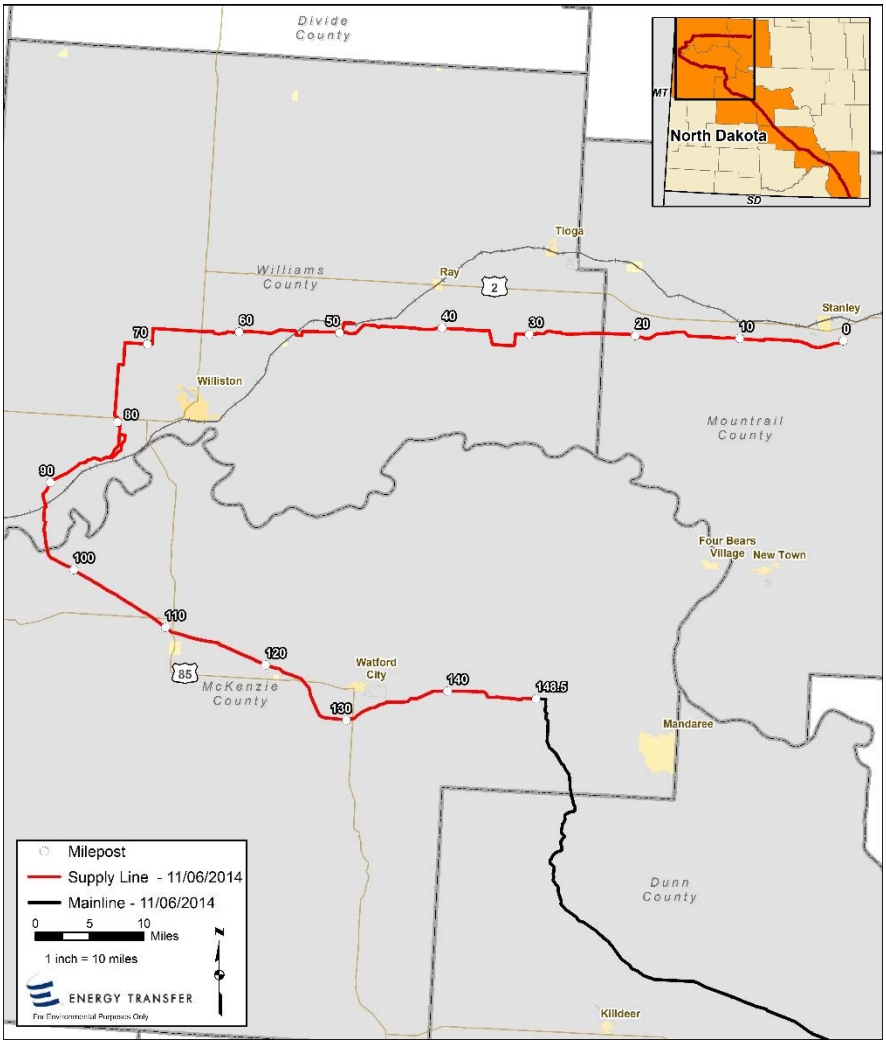

Figure 1-3: DAPL Supply Line

Six tank terminals are proposed throughout the length of the Supply Line, including the pipeline's commencement point near Stanley, North Dakota, and subsequent tank terminals located south of Tioga, near Epping, near Trenton, near Watford City, and at Johnson Corner.

At the discharge side of the Johnson Corner tank terminal and pump station, the 30-inch diameter Mainline commences and heads in a general southeast direction through North Dakota and eastern South Dakota, across Iowa and into Illinois, terminating at Patoka, Illinois. The Mainline portion of the DAPL Project in North Dakota is approximately 210 miles long before crossing the state line at the Emmons County, ND/Campbell County, SD border (Figure 1-4). Additionally, the Mainline crosses portions of South Dakota, Iowa, and Illinois for a combined total of approximately 1,150 miles.

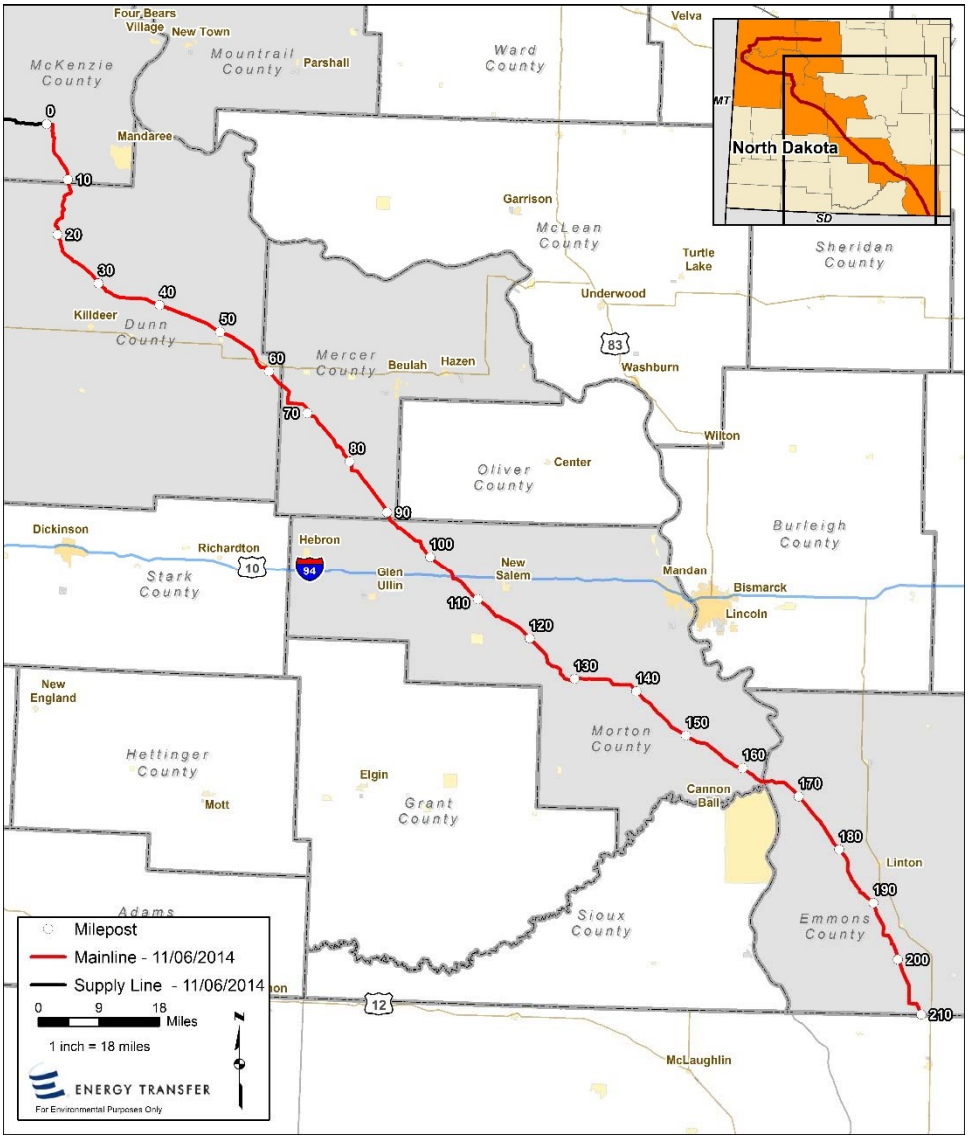

Figure 1-4: DAPL Main Line

2.0 DESIGN OF THE FACILITY

2.1 DESIGN OF PROPOSED FACILITY

Pipeline

The facility design includes an approximately 148-mile long Supply Line route with 12-, 20-, 24-, and 30-inch diameter pipeline and associated valves, as well as six tank terminals with pump stations and other appurtenances. An approximately 210-mile long Mainline underground 30-inch pipeline with associated valves and launcher/receivers connects with the Supply Line at Johnson Corner and completes the facility in North Dakota at the border with South Dakota (see Exhibit A.1).

Tank Terminals

The tank terminals would store the crude oil in fixed-roof aboveground welded steel storage tanks designed and constructed in accordance with API Standard 650 Welded Steel Tanks for Oil Storage. Internal floating roofs shall be used to minimize emissions. The tank foundations would be concrete ringwall foundations with secondary containment foundations and leak detection systems under the tank floors. The tanks would be tested with water to ensure integrity prior to being placed into service. The tanks would be inside diked containments designed for containment of largest tank capacity plus stormwater from a 25 year, 24 hour storm event. The tanks would have redundant level transmitters, and an independent overfill protection device to shut in the tank and notify the control center of high-high level conditions. The tanks would be inside facility chain link fencing with locked gates controlled by operations personnel.

The Stanley tank terminal near Stanley, in Mountrail County, North Dakota, would be the origin point of the Supply Line. This tank terminal would include two 120,000 barrel-capacity tanks. Equipment associated with the preferred Stanley tank terminal would include tank inlet and outlet manifolds, shipper receiving traps, shipper custody transfer meters, truck unloading facilities, booster pumps, one main line outlet pipeline meter, mainline pipeline pumps, and a pig launcher trap (Exhibit B). An alternate Stanley tank terminal has been considered as a contingency and is discussed in further detail in Section 2.11. An underground pipeline system that includes a 12-inch pipeline that would extend approximately 27 miles to the west and would connect the Stanley terminal to the Ramberg tank terminal.

The Ramberg tank terminal in Williams County would include three tanks with storage capacities of 100,000, 150,000, and 200,000 barrels. Equipment at the Ramberg terminal would include tank inlet and outlet manifolds, shipper receiving traps, shipper custody transfer meters, truck unloading facilities, booster pumps, inlet and outlet pipeline meters, and pig traps. At the Ramberg terminal, the diameter of the Supply Line pipeline would expand from 12 inches to 20 inches. The 20-inch pipeline would extend approximately 22 miles west to the Epping tank terminal. Two alternate Ramberg tank terminal sites near the preferred site are under consideration as a contingency and are discussed in further detail in Section 2.11.

Also in Williams County, the Epping tank terminal would include one 100,000 barrel-capacity tank and one 150,000 barrel-capacity tank. Equipment at the Epping terminal would include tank inlet and outlet manifolds, shipper receiving traps, shipper custody transfer meters, truck unloading facilities, booster pumps, inlet and outlet pipeline meters, and pig traps. Upon departure from the Epping terminal, the 20-inch pipeline would extend approximately 33 miles south and west to the Trenton tank terminal.

An alternate Epping tank terminal site near the preferred site is under consideration as a contingency and is discussed in further detail in Section 2.11.

The Trenton tank terminal is the last of the terminals in Williams County. Similar to the Epping terminal, the Trenton terminal would contain one 100,000 barrel-capacity tank and one 150,000 barrel-capacity tank. Equipment at the Trenton terminal would include tank inlet and outlet manifolds, shipper receiving traps, shipper custody transfer meters, truck unloading facilities, booster pumps, inlet and outlet pipeline meters, and pig traps. At the Trenton terminal, the Supply Line diameter would expand from 20 inches to 24 inches. The 24-inch pipeline would extend approximately 48 miles to the south and east to the proposed Watford City terminal in McKenzie County. An alternate Trenton tank terminal site near the preferred site is under consideration as a contingency and is discussed in further detail in Section 2.11.

The Watford City tank terminal would include two 100,000 barrel-capacity tanks and one 150,000 barrel-capacity tank. Equipment at the Watford City terminal would include tank inlet and outlet manifolds, shipper receiving traps, shipper custody transfer meters, truck unloading facilities, booster pumps, inlet and outlet pipeline meters, and pig traps. At the Watford City terminal, the pipeline diameter would expand from 24 inches to 30 inches. The 30-inch pipeline extend approximately 18 miles to the east to the proposed Johnson Corner terminal in McKenzie County.

The Johnson Corner tank terminal, which would contain two 200,000 barrel-capacity tanks, would also contain tank inlet and outlet manifolds, shipper receiving traps, shipper custody transfer meters, truck unloading facilities, booster pumps, inlet and outlet pipeline meters, and a pipeline pump manifold.

The Johnson Corner tank terminal marks the end of the Supply Line and the beginning of the Mainline. The 30-inch pipeline, with an operational capacity of 570,000 bpd, would continue from the Johnson Corner terminal to the south and east approximately 210 miles through Dunn, Mercer, Morton, and Emmons Counties, where it crosses South Dakota border.

Other Aboveground Facilities

Valves used to isolate specific sections of pipeline and minimize crude release would be located throughout the pipeline, including 29 throughout the Supply Line, and 25 throughout the Mainline (see Exhibit A.1). The permanent valve sites would measure approximately 50 feet in width by 75 feet in length.

Highly technical pipeline inspection gauges, or pigs, would be used to inspect the pipeline and associated launcher/receiver facilities would be required for this process. A total of 11 launcher/receiver facilities each measuring approximately 200 feet wide and 400 feet long would be located along the pipeline (see Exhibit A.1).

2.2 PURPOSE AND NEED OF THE FACILITY

The DAPL Project's purpose is to move an economical, abundant, reliable, and domestic supply of crude oil from the Bakken and Three Forks production region in North Dakota to a crude oil market hub located near Patoka, Illinois. From the Patoka hub, the crude oil will be transported by other pipelines to refineries located in the Midwest and the Gulf Coast where 80 percent of the U.S. refining capabilities exist today to further our Country's goal of energy independence.

In addition to moving the crude from the production region, the project purpose can be summed up in four major categories:

1. **First, the DAPL Project will improve overall safety to the public and environment.** It will reduce crude oil shipped by truck and by rail and increase the amount shipped by pipeline. Pipelines are the safest and most efficient means to transport crude oil, according to statistics compiled by the United States Department of Transportation. Pipelines are heavily regulated and are subject to intense scrutiny and oversight. Time and time again, pipelines have proven to be the safest and most reliable form of transporting oil.
2. **Second, the DAPL Project will play a role in increasing America's energy independence.** The pipeline is a means to transport domestic produced crude oil to support United States consumers' energy demand. The United States still imports half of the oil it consumes per day, and the pipeline will provide a critical link to help close the gap between what we produce as a country and what we consume.
3. **Third, the DAPL Project will create another reliable transportation route for crude oil from the Bakken.** The Bakken and Three Forks production area has witnessed a significant increase in the production of crude oil, from 309,000 bpd in 2010 to more than 1 million bpd in 2014. Through the DAPL Project, Midwest and Gulf Coast refineries will have better access to more reliable United States crude oil production to be used to meet United States consumers' need for gasoline, diesel fuel, and other petroleum products.
4. **Finally, the DAPL Project will ease transportation constraints for agricultural products**. The DAPL Project will free-up rail capacity for the transportation of crops and other commodities currently held up by crude oil cargos. For example, a lack of rail capacity to move grain out of South Dakota has resulted in tariffs on grain railcars increasing from $50 to nearly $1,400 per car. These cost increases can carve up to $1.00 from every bushel of corn shipped.

The pipeline will not only provide a long term safe, reliable and energy efficient option to move crude oil out of the Bakken and Three Forks production area to continue to enhance America's energy independence, it will also provide direct benefits to communities located along and near the DAPL Project route. These benefits will include, but are not limited to, providing: temporary construction employment; full time, local jobs to operate and maintain the pipeline; ROW payments; additional sales tax revenues from the sale of goods and services during construction and long term to operate and maintain the pipeline; annual State and local community revenue from property taxes; and long term support of regional contractors, manufacturers, distributers, and retailers through ongoing purchase of goods and services to operate and maintain the DAPL Project.

Briefly, the DAPL Project will deliver domestically produced crude oil from the abundant Bakken and Three Forks production area to United States refineries where the crude oil will be refined into products to meet consumers' need for fuels (e.g., gasoline, diesel, and kerosene), and after further processing, for crude oil derivative products (e.g., plastics, paints, and chemicals). The overall DAPL Project is a $3.78 billion dollar investment directly impacting the local, regional, and national labor force by creating nearly 12,000 construction jobs. As a matter of practice and our promise as part of this project, Dakota Access will utilize American labor to build the pipeline. Dakota Access has teamed up with the various craft and labor unions in the project regions and nationally to ensure the DAPL Project is constructed by highly qualified and experienced local and regional labor resources. These well-paying construction jobs will create considerable labor income and state income tax revenue – including the generation of more than $13.4 million in ad valorem taxes. Upon authorization, the DAPL Project will put

welders, mechanics, electricians, pipefitters, heavy equipment operators, and others within the heavy construction industry to work.

Construction of the DAPL Project will also contribute more than $1 billion in direct spending just for materials – the majority of which will be purchased here in the United States. Fifty-seven percent of the pipe, the majority of the valves, fittings, valve actuators, and the majority of the remaining materials will be manufactured in the United States, creating significant opportunities for regional and national manufacturing. In addition to manufactured goods and services, the DAPL Project will provide $195 million in easement payments to the landowners whose property is crossed by the proposed pipeline.

Overall, the DAPL Project's purpose is to provide an efficient, safe, and reliable transportation solution to move crude oil from the Bakken and Three Forks production areas to United States markets, which meets the need to improve United States energy independence and provide a more reliable supply of crude oil to United States refineries for processing to meet domestic needs for fuels and other petroleum derivative products. It also has tremendous secondary and sustainable economic benefits to the United States by supporting energy independence, increasing employment opportunities, and adding to demand in many manufacturing sectors, which will be a boost to the overall economy. When considering the economic impact and benefit, once United States workers are employed on the DAPL Project, consistent with most mega-infrastructure projects, the workers will spend their earnings in the communities where they work and live, resulting in multiplied economic impacts that will be nearly $5 billion just during the construction phase. This economic impact will affect manufacturing in many domestic sectors such as the following examples. It will result in new vehicles being purchased, which positively impacts the auto industry. It will result in new homes being built, which improves and increases the housing construction, resale, and lending business located in the region and across the United States. It impacts the food industry by requiring more food services and products to be delivered and consumed in the DAPL Project region. The list could continue with a description of many secondary benefits, but in summary, the economic impact to the United States as well as the immediate region where the pipeline is located is tremendous and critical to keep Americans employed and our economy moving forward.

2.3 GENERAL AREA TO BE SERVED

The DAPL Project will deliver domestically produced crude oil from the abundant Bakken and Three Forks production areas to United States refineries in the Midwest and Gulf Coast, where the crude oil will be refined into products to meet the existing need for fuels (e.g., gasoline, diesel, and kerosene) and further processing for crude oil derivative products (e.g., plastics, paints, and chemicals) throughout the U.S.

2.4 CAPACITY

The project will transport approximately 450,000 barrels per day (bpd) and a maximum capacity of 570,000 bpd or greater based on customer demand. The tank capacity at each site is identified below.

Table 2.4-1 Capacity – Tank Terminal Storage Capacity	
Tank Terminal	**Total Storage Capacity (Barrels)**
Stanley Station	240,000
Ramberg Station	450,000
Epping Station	250,000
Trenton Station	250,000
Watford City Station	350,000
Johnson Corner Station	400,000

2.5 TECHNOLOGY TO BE DEPLOYED/EMPLOYED

The DAPL Project will be designed, constructed, maintained, and inspected to meet or exceed the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations utilizing industry standards and company policies. These measures will include external protective coating and the use of cathodic protection to prevent external corrosion along with regular internal pipeline inspection via highly technical pipeline inspection gauges or pigs. Regular aerial patrol of the permanent ROW will also be carried out via airplane or helicopter a minimum of 26 times per year (an average of every 14 days). Foot patrols will take place on the same schedule in areas where aerial patrol is not feasible. The system will be monitored 24 hours a day, 7 days a week, and 365 days a year by trained controls personnel. Additionally the system is set up with a monitoring and alarm system that continuously monitors the flow and pressure of the system and readily signifies anything outside normal operating conditions. Mainline valves along the pipeline will be installed with remote actuators so that they could be closed remotely (within 3 minutes) in the event of an emergency.

Construction and installation of the pipeline will utilize different techniques to avoid or minimize impacts to sensitive areas and identified road/railroad crossings and will incorporate the use of horizontal directional drilling (HDD). In the event of an inadvertent release during HDD installation, Dakota Access will implement an HDD Contingency Plan (see Exhibit C.4).

Aboveground storage tanks are equipped with technology designed to maximize efficiencies, personal safety, and environmental protection. Lists of different equipment associated with the storage tanks and tank terminals are presented in Section 2.1.

The construction of the tank terminals would be accomplished using standard construction techniques, including site preparation (i.e., clearing, grubbing, grading), concrete pouring, and steel erection.

2.6 TYPE OF PRODUCT TO BE TRANSMITTED

Crude petroleum will be transported by the DAPL Project.

2.7 SOURCE OF PRODUCT TO BE TRANSMITTED

The anticipated sources of the crude petroleum are formations in the Williston Basin.

2.8 FINAL DESTINATION OF PRODUCT

The final destination of the crude petroleum will be the crude oil terminal hubs near Patoka, Illinois, and Nederland, Texas, where the crude petroleum will be able to access major U.S. refining markets.

2.9 WIDTH OF RIGHT-OF-WAY

For both the Supply Line and Mainline, in upland areas, the new 12- to 30-inch diameter pipeline will be installed using a typical construction workspace of 125 to 150 feet depending on soil conditions and landowner preferences. In emergent non-saturated wetland areas, the construction right-of-way (ROW) width will be reduced to 100 feet; in saturated, forested, and scrub shrub wetlands, or other sensitive areas as prescribed in permits or consultations, the construction workspace will be reduced to 85 feet. Additional workspace will be required to facilitate crossings of other utilities, roads, railways, etc. At all locations, 50 feet of the construction ROW (generally 25 feet on either side of the centerline of the pipeline) will be secured for permanent easement to facilitate operating the DAPL Project. Fee owned lands have been/will be secured for all tank sites and pump stations; additional temporary workspace at these locations will be acquired as necessary.

2.10 APPROXIMATE LENGTH OF FACILITY

The DAPL Project consists of approximately 358 total miles of pipeline of varying diameter in North Dakota (see Table 2.10-1) with approximately 272 miles in South Dakota, 345 miles in Iowa, and 179 miles in Illinois.

Table 2.10-1
Approximate Length of Dakota Access Pipeline Project – North Dakota

State/Route	County/Counties	Milepost From	Milepost To	Total Miles	Pipe Diameter (inches)
North Dakota – Supply Line	Mountrail, Williams	0	27	27	12
	Williams	27	82	55	20
	Williams, McKenzie	82	130	48	24
	McKenzie	130	148	18	30
North Dakota - Mainline	McKenzie, Dunn, Mercer, Morton, Emmons	0*	210	210	30

* Johnson Corner serves as the terminus point of the Supply Line and the commencement of the Mainline, therefore the Milepost system resets to zero.

2.11 REQUIREMENT FOR AND GENERAL LOCATION OF ANY NEW ASSOCIATED FACILITIES

The preferred Stanley tank terminal site would be located on approximately 25 acres in the W ½ of the SW ¼ of Section 25, Township 156N, Range 92W. The facility would be accessible via 63rd St NW, approximately 0.5 miles south of U.S. Highway 2, 3 miles west of Stanley. The alternate site would be 21 acres in the NW ¼ of the NW ¼ of Section 35, Township 156N, Range 91W, would be accessible via 61st St NW, approximately 0.1 miles east of 80th Ave NW, 1.5 miles southeast of Stanley. Regardless of the final site selected, the layout of the site would be similar. The two 120,000-barrel tanks and associated

equipment and piping would be located on the southern one-third of the site while the northern two-thirds of the site would be used for a variety of buildings, parking area, truck unloading area, and equipment necessary for operations and maintenance activities.

The preferred Ramberg tank terminal site would be located on approximately 21 acres in the E ½ of the SE ¼ of Section 31, Township 156N, Range 95W, and would be accessible via 60th St NW and 104th Ave NW, approximately 7.5 miles south of Tioga. Two alternative sites, one in the SE ¼ of the SE ¼ and the other in the NW ¼ of the SE ¼ of Section 32, Township 156N, Range 95W have been selected as contingencies. Both sites would be accessible via 60th St NW and 103rd Ave NW, approximately 7.5 miles south of Tioga. At all three of the proposed sites, the footprint would be similar. The 100,000-barrel and 200,000-barrel tanks and associated equipment and piping would be located on the southern half of the site while the 150,000-barrel tank and associated equipment and piping would be located in the northwest corner of the site. The northern portion of the site would be used for the required buildings, parking area, truck unloading area, and other equipment necessary for operations and maintenance activities.

The preferred Epping tank terminal site would be located on approximately 20 acres in the SW ¼ of the SW ¼ of Section 32, Township 156N, Range 98W, approximately 1.5 miles northeast of Epping. The facility is accessible via 60th St NW and County Rd 8C. The 100,000-barrel and 150,000-barrel tanks and associated equipment and piping would be located on the eastern one-third of the site while the western two-thirds of the site would be used for the required buildings, parking area, truck unloading area, and other equipment necessary for operations and maintenance activities. An alternative Epping terminal site would be collocated with an existing facility with available tank capacity, therefore the site would be approximately 7 acres to accommodate the remaining terminal facilities; the site would be located in the NE ¼ of the SE ¼, Section 1, Township 155N, Range 99W.

The preferred Trenton tank terminal site would be located on approximately 20 acres in the SW ¼ of the SE ¼ of Section 35, Township 154N, Range 102W. The facility would be approximately 4.5 miles northeast of Trenton and is accessible via 48th St NW, 0.5 miles east of North Dakota Highway 1804. The 100,000-barrel and 150,000-barrel tanks and associated equipment and piping would be located on the northern one-third of the site while the southern two-thirds of the site would be used for the required buildings, parking area, truck unloading area, and other equipment necessary for operations and maintenance activities. An alternative Trenton terminal site with a similar footprint has been selected as a contingency to the preferred Trenton site and would be located in the NE ¼ of the NE ¼, Section 3, Township 153N, Range 102W.

The Watford City tank terminal would be located on approximately 32 acres within the NE ¼ of Section 1, Township 149N, Range 99W. The facility would be accessible via 24th St NW approximately 3 miles south of Watford City. The two 100,000-barrel tanks and the 150,000-barrel tank and associated equipment and piping would be located on the southern two-thirds of the site while the northern one-third of the site would be used for the required buildings, parking area, truck unloading area, and other equipment necessary for operations and maintenance activities.

The Johnson Corner tank terminal site would be located on approximately 50 acres in the NE ¼ of Section 23, Township 150N, Range 96W. The facility would be approximately 0.75 miles east of Johnson Corner and would be accessible via the west side of a private drive just south of North Dakota Highway 73. The two 200,000-barrel tanks, associated equipment, and piping would be located on the northwestern portion of the site while the remaining portions of the site of the site would be used for the

required buildings, parking area, truck unloading area, and other equipment necessary for operations and maintenance activities. Additional space would be set aside for the future construction of additional storage tanks.

Every tank terminal would house a metering station, pigging facilities, and a pump station. The locations of these facilities would be within the respective descriptions above. One additional pigging facility is proposed along the mainline in North Dakota.

2.12 ESTIMATED DISTANCE BETWEEN SURFACE STRUCTURES FOR PIPELINE FACILITIES

Estimated distances between surface structures are presented in Table 2.4-1.

2.13 PIPE SIZE FOR PIPELINE FACILITIES

The specifications for the steel pipe utilized for the DAPL Project will vary based on location and diameter. All pipe will be X52 (12 inch diameter) or X70 (all other diameters) grade steel pipe manufactured according to American Petroleum Institute Specifications API5L Seamless Line Pipe and will meet International Organization for Standardization (ISO) 3183 and applicable Design Codes (49 CFR Part 195). Pipe coating will be a fusion bond epoxy with abrasion resistant coating. Table 2.13-1 indicates the specifications of the pipe that will apply at different locations of the DAPL Project.

Table 2.13-1
Pipeline Sizes and Specifications

Starting Point	End Point	Diameter (inches)	Wall Thickness – non crossing sites (inches)	Wall Thickness – crossing sites (inches)	Specified Minimal Yield Strength (psi)
Stanley Terminal	Ramberg Terminal	12	0.375	0.500	52,000
Ramberg Terminal	Epping Terminal	20	0.312	0.438	70,000
Epping Terminal	Trenton Terminal	20	0.312	0.438	70,000
Trenton Terminal	Watford City Terminal	24	0.375	0.625	70,000
Watford City Terminal	Johnson Corner Terminal	30	0.429	0.625	70,000
Johnson Corner Terminal	South Dakota State Line	30	0.429	0.625	70,000

2.14 MAXIMUM DESIGN OPERATING PRESSURE AND TEMPERATURE FOR PIPELINE FACILITIES

The maximum operating pressure for the pipeline is 1,440 pounds per square inch (psi) throughout the DAPL Project. The pipeline facilities will be designed for operation between -20^{o} Fahrenheit (F) to 120^{o} F.

2.15 MAXIMUM DESIGN FLOW RATE FOR PIPELINE FACILITIES

The current maximum design flow rate for the new pipeline varies as the diameter of the pipe changes:

- 100,000 bpd Stanley terminal to Ramberg terminal
- 240,000 bpd Ramberg terminal to Epping terminal
- 300,000 bpd Epping terminal to Trenton terminal
- 450,000 bpd Trenton terminal to Watford City terminal
- 600,000 bpd Watford City terminal to Johnson Corner terminal
- 600,000 bpd Johnson Corner terminal to South Dakota State Line

2.16 NUMBER AND GENERAL LOCATION FOR COMPRESSOR OR PUMPING STATIONS

There will be one pump station located within each of the tank terminal sites. There are no other proposed pump stations in North Dakota.

2.17 ESTIMATED TOTAL COST OF CONSTRUCTION

The total estimated cost of the DAPL Project is $3.78 billion with nearly $1.41 billion estimated to be attributed to construction in North Dakota. An estimated $463 million will be spent for the construction of the tank terminals and pump stations and with an estimated $945 million that will be spent in the state for the construction of the pipeline. Project construction will generate an estimated $18 million in sales taxes and an estimated $13.4 million in property taxes will be generated in 2017 alone.

2.18 PREFERRED LOCATION OF FACILITY

Refer to Section 2.11 for preferred location of facilities.

2.19 PREFERRED LOCATION OF CORRIDOR

The location of the corridor is depicted in the aerial maps in Exhibit A.1. A significant amount of work went into the routing and selection of the proposed route. A sophisticated proprietary program incorporated dozens of geographic information system (GIS) layers of data for the DAPL Project area from the origin of the first tank terminal to the existing tank hub in Patoka, Illinois. Information relative to high consequence areas (e.g., populated areas, wetlands, waterbodies, areas of cultural significance or high probability, public lands, etc.) and other unfavorable constructability/operational features were weighed in an attempt to avoid and minimize proximity to potential impacts to these features; while existing ROWs (e.g., pipelines, roads, railways, powerlines, etc.) and features for favorable constructability/operations were weighed in an effort to maximize collocation. The shortest route that accomplished the desired avoidance/minimization and maximization efforts was the end result and served as the baseline for the proposed corridor. This baseline was then scrutinized across disciplines (e.g., environmental, engineering, construction, and ROW) for further optimization. Lastly, field surveys, additional constructability reviews, and landowner communications are ongoing to finalize micro-routing to determine the exact placement of the pipeline and facilities along the established route corridor.

2.20 DESCRIPTION OF ROW PREPARATION AND CONSTRUCTION AND RECLAMATION PROCEDURES

The DAPL Project will follow a standard pipeline construction sequence that will include clearing and grading, trenching, pipe stringing, bending and welding, pipeline installation and backfilling, and restoration.

2.20.1 CLEARING AND GRADING

Prior to commencement of ground disturbing activities, a standard survey and stakeout will be conducted to identify ROW and workspace boundaries, sensitive areas, and existing foreign utility lines within the construction ROW. Following the completion of the surveys, the construction ROW will be cleared of vegetation and debris. Within forested wetlands, stumps will be cut flush with the ground and left in place except over the trenchline and where removal is necessary to facilitate the creation of a safe and level workspace. Cleared vegetation and debris along the ROW will be disposed of in accordance with federal, state, and local regulations either by burning, chipping and spreading, or transportation to a disposal facility. Where necessary to contain disturbed soils during clearing and grading in upland areas, and to minimize potential erosion and sedimentation of wetlands and waterbodies, temporary erosion control devices will be installed and will be maintained throughout construction. Vegetative buffers will be left where practical at all wetland and waterbody crossings to limit the exposure and impact to these features. Final clearing would take place immediately prior to crossing the feature rather than advance.

2.20.2 TRENCHING

Trenching involves excavation of a ditch for pipeline placement and is accomplished through the use of a trenching machine, backhoe, or similar equipment. Trench spoil will be deposited adjacent to each trench within the construction work areas with topsoil segregation utilized where necessary based on land use and/or landowner specifications. In standard conditions, the trench will be excavated to an approximate depth to allow for a minimum of 36 inches of cover over the pipe. Typically the bottom width of the trench will be cut at least 12 inches greater than the width of the pipe. The width at the top of the trench will vary to allow the side slopes to be adapted to local conditions at the time of construction for safety and compliance.

2.20.3 PIPE STRINGING, BENDING, AND WELDING

Following preparation of the trench, the new pipe will be strung and distributed along the ROW parallel to the trench. Depending on available workspace, some pipe may be fabricated off-site and transported to the ROW in differing lengths or configurations. Pipe will be bent by on-site bending machines, as necessary, to conform the pipe to the trench. Once in place along the ROW, pipe lengths will be aligned, bends fabricated, and joints welded together on skids (i.e., temporary supports). Welding will be performed in accordance with the American Petroleum Institute Standards, PHMSA regulations, and company welding specifications. All welds will be coated for corrosion protection and visually and radiographically inspected to ensure there are no defects.

2.20.4 PIPELINE INSTALLATION AND TRENCH BACKFILLING

Completed sections of pipe will be lifted off the temporary supports by side boom tractors or similar equipment and placed into the trench. Prior to lowering-in, the trench will be visually inspected to ensure that it is free of rock and other debris that could damage the pipe or the coating. Additionally, the

pipe and the trench will be inspected to ensure that the configurations are compatible. Tie-in welding and pipeline coating will occur within the trench to join the newly lowered-in section with the previously installed sections of pipe. Following this activity, the trench will be backfilled with the previously excavated material and crowned to approximately 6 inches above its original elevation to compensate for subsequent settling.

2.20.5 RESTORATION AND RECLAMATION

Pipeline construction is carried out as a progressive assembly manufacturing process, akin to an outdoor assembly line comprised of specific activities that make up the linear construction sequence. These activities include survey and staking of the ROW, clearing and grading, topsoil stripping, pipe stringing and bending, welding and coating, trenching, lowering-in and backfilling, hydrostatic testing, cleanup, and restoration, revegetation, and reclamation.

Upon completion of construction, the ROW is restored to preconstruction conditions, including slope and vegetation. Temporary and permanent stabilization measures such as slope breakers, mulching, and seeding will be implemented where appropriate; fences removed for pipeline installation will be re-built as appropriate; and generally the land will be returned to its preconstruction use. Disturbed areas will be revegetated in accordance with Dakota Access' Environmental Construction Plan (ECP)(Exhibit C.1 – this document is currently under development and will be submitted in January 2015), other permit requirements, and site-specific landowner requests. Trees and shrubs cleared from additional temporary workspace will be allowed to reestablish after construction, and the implementation of revegetation measures will take into account recommendations from applicable regulatory agencies and arrangements with landowners.

2.21 STATEMENTS DESCRIBING HOW DAKOTA ACCESS INFORMS AFFECTED LANDOWNERS

Dakota Access has been working diligently with landowners along or in the vicinity of the proposed DAPL Project route, with the appropriate public entities to obtain survey permission on all tracts involved, consent for access to such tracts, and ultimately easements for both the pipeline and its surface facilities. Landowners and concerned public officials have been mailed the requisite North Dakota Public Service Commission information along with various informational mailings. Mailings were sent to landowners along or in the vicinity of the proposed route of the new Dakota Access pipeline. Through such introductory and informational efforts, Dakota Access has initiated contact with all landowners on the proposed pipeline route. Detailed discussions and negotiations for easements and other necessary interests have begun. Dakota Access will keep the Commission advised of the progress thereof. More information on public outreach is discussed in Section 6.0 of this document.

2.21.1 EASEMENT ACQUISITION

Dakota Access is instituting for the DAPL Project a land-acquisition program similar to those found successful in past pipeline projects in North Dakota. Under such programs, landowners along the proposed route are identified using publically available information. Easement acquisition will open a dialogue with the proposed landowners to provide them with pertinent information relevant to their respective properties. Landowner input in the route-planning process is solicited, and when possible, adjustments in the route are made to accommodate landowner concerns. Landowners are compensated for project required interests at or above their fair market values. Compensatory offers for easements and other land rights are based on careful analysis of comparable property values

including third party appraisal information. All offers are presented to landowners in writing with appropriate legal descriptions and depictions identifying the parameters and location of the pipeline and temporary construction easements. Offers for easements adhere to the Commission's requirements, and Dakota Access supplements such data with its own material about the pipeline, pipeline construction, and agricultural mitigation. Dakota Access' intent is to compensate landowners at or above fair market value for lands involved with fee purchases and permanent easements while compensating at a rate of 50 percent of the fee market value for temporary easements to be utilized during construction of the pipeline. Dakota Access acquisition agents are trained and tasked to negotiate respectfully and in good faith with all landowners and governing entities. Dakota Access stresses to its acquisition agents its preference for all negotiations, when possible, to be conducted with each landowner in person as often as necessary to reach a mutually beneficial agreement.

Dakota Access adheres to its policy of compensating landowners via a generous formula for any non-restorable incidental damages incurred as a result of its pipeline construction activity such as loss of marketable trees or crop losses. Dakota Access intends to restore any area affected by construction to reflect its pre-existing condition as much as reasonably possible and in accordance with all DAPL Project plans (e.g., agricultural mitigation plan and project reclamation plan).

Information efforts and programs in the form of meetings and open house sessions are also employed to inform landowners and interested persons such as Farm Bureau members and local officials of Project plans, procedures, and potentials. Five open house sessions have been held in North Dakota to date. The sessions were held on September 29, 2014, in New Salem, North Dakota; September 30, 2014 in Killdeer, North Dakota; October 1, 2014 in New Town, North Dakota; October 2, 2014, in Watford City, North Dakota; and November 17, 2014, in Williston, North Dakota. By implementing such practices and procedures, Dakota Access is confident in its ability to acquire most of the requisite easements as a result of good-faith negotiations.

Each easement agreement that Dakota Access presents to a property owner includes terms and conditions that clearly define the parties' respective rights regarding the future use of the areas affected by the easement.

Dakota Access exhausts all reasonable efforts to avoid exercising any rights it may be granted regarding eminent domain due to the fact that such exercises are costly and inefficient for both parties involved. Nonetheless, experience suggests that authority to utilize such rights in proper circumstances, such as a landowner's refusal to negotiate in good faith or a landowner's refusal to respond to multiple forms of contact, may be essential. Such authority would further enable the construction of the pipeline along a route that is most efficient for all facets of the project including environmental concerns, cultural concerns, engineering compatibility, and public interest.

3.0 ALTERNATIVES

3.1 ALTERNATIVES TO THE PROPOSED FACILITY

3.1.1 NO ACTION ALTERNATIVE

With the current and projected growth of Bakken oil production, capacity to transport crude to market has struggled to keep pace. Even with several new crude oil pipelines and pipeline expansion projects in various stages of development, the projects will be inadequate to keep up with expected growth.[1] Dakota Access' ability to secure long-term binding contractual commitments from shippers to fully support the DAPL Project is indicative of the need for additional reliable, safe transport capacity of crude oil supplies. To meet this demand, a "no action" alternative is not considered a viable alternative.

3.1.2 SYSTEM ALTERNATIVES

Existing infrastructure for the scope of the DAPL Project does not exist; system alternatives are not feasible.

3.1.3 TRANSPORTATION METHOD

While trucking is instrumental in the gathering and distribution of crude on a limited scale, trucking as an alternative for transporting the volume of crude oil the distances involved as those planned for the DAPL Project is not viable. Factors such as road safety, roadway capacity, a lack of reliability due to seasonal constraints, along with other logistical issues such as available labor force, trailer truck capacity, and economics contribute to not considering truck transportation as a realistic alternative.

A sharp increase in traffic on North Dakota roads as a result of the rapid expansion in the number of commercial trucks linked to the oil industry speaks to the issues associated with road safety. The Federal Motor Carrier Safety Administration reports a traffic fatality rate in North Dakota of 0.48 per million vehicle miles traveled in 2012 with 48 deaths involving a bus or large truck, far surpassing any other state.[2] With an average of only 13 annual deaths involving commercial trucks in the pre-boom years of 2001 to 2005, and the economic cost of severe truck crashes more than doubling between 2008 to 2012, much of the increase in the fatality rate can be attributed to the energy production boom, along with the fact that much of the infrastructure is still single-lane, rural, and unpaved roads.[3] Harsh winter weather and seasonal road restrictions compromise the reliability of truck transportation even further.

[1] Bentek Energy. 2012. The Williston Basin: Greasing the Gears for Growth in North Dakota. North Dakota Pipeline Authority. http://ndpipelines.files.wordpress.com/2012/07/bentek-nat-gas-study-july-25-2012.pdf.

[2] U.S. Department of Transportation. 2014. Pocket Guide to Large Truck and Bus Statistics. Federal Motor Carrier Safety Administration. http://www.fmcsa.dot.gov/sites/fmcsa.dot.gov/files/docs/FMCSA%20Pocket%20Guide%20to%20Large%20Truck%20and%20Bus%20Statistics%20-%202014%20-%20508C.pdf

[3] Bachman, J. 2014. North Dakota's Downside to the Oil Boom: Traffic Deaths. Businessweek. http://www.businessweek.com/articles/2014-06-09/north-dakotas-downside-to-the-oil-boom-traffic-deaths

To meet shippers' demands, Dakota Access will have transportation capacity to shipper over 450,000 bpd approximately 1,150 miles across 4 states. For the volumes transported and distances covered by the DAPL Project, a pipeline is a safer and more economical alternative than trucking. Assuming the average oil tanker truck is capable of holding about 220 barrels of oil, the transportation of 450,000 bpd would require a total of 2,045 (450,000/220) full trucks to depart the proposed tank terminals daily; more than 85 (2045/24) trucks would have to be filled every hour. Assuming the nearest refineries would have the available capacity to receive DAPL Project crude, drive times to the nearest locations would vary from 6 hours round trip (Mandan, North Dakota – capacity 71,000 bpd[4]) to 10 hours round trip (Billings, Montana – capacity 58,000 bpd [Phillips 66[5]] and 60,000 bpd [ExxonMobil[6]]) to 20 hours round trip (Rosemount, Minnesota – capacity 339,000 bpd[7]) and more. Time spent in transit, loading/offloading, and additional time for maintenance would add to the number of trucks that would form a part of the DAPL Project.

Analysis of infrastructure considerations (the burden of thousands of additional trucks on county, state, and interstate highways, as well as the loading and offloading facilities that would have to be constructed), economic considerations (e.g., labor costs, purchase and maintenance of hauling equipment, fuel, public infrastructure, etc.), and reliability considerations (e.g., weather, mechanical, manpower, road closures) all contribute to making the truck transportation alternative unviable.

Rail Transportation Alternative

Reliance on rail as a transportation method in the Williston Basin has drastically increased in recent years, carrying a negligible percentage of the overall market share as recently as 2010 to nearly 60 percent of the overall market share by mid-2014.[8] The rise in the use of rail as a primary transportation method has been driven in large part by the rapid increase in production of crude oil coupled with a lack of pipeline capacity to account for additional supplies.

The downsides of the growth in popularity of rail as a method of long-distance transportation of crude oil have included delays that have had negative impacts on the agricultural sector, have led to reductions in coal-fired power plant inventories, and have been responsible for production issues in the food production industry, among others. Reports filed with the federal government in August 2014 indicate that the Burlington Northern Santa Fe Railway had a backlog of 1,336 rail cars waiting to ship grain and other products while Canadian Pacific Railway had a backlog of nearly 1,000 cars.[9] For industries such as those listed in which the use of pipelines is not an option, the only viable alternative would be increased reliance on trucking, which would exacerbate some of the issues listed above.

---

[4] Tesoro. Mandan Refinery. Undated. http://tsocorp.com/refining/mandan-n-d/

[5] Phillips 66. Undated. Refining Western United States and Asia Refining. http://www.phillips66.com/EN/about/our-businesses/refining-marketing/refining/Pages/index.aspx

[6] ExxonMobil. Undated. We are ExxonMobil Billings Refinery. http://corporate.exxonmobil.com/~/media/Brochures/2011/billings_brochure.pdf

[7] Flint Hills Resources. 2014. Minnesota Facts. Flint Hills Resources. http://www.fhr.com/upload/FHRMinnesotaFacts.pdf

[8] Kringstad, J. 2014. Energy Development and Transmission Committee. North Dakota Pipeline Authority. https://ndpipelines.files.wordpress.com/2012/04/kringstad-edt-7-8-2014.pdf.

[9] Nixon, R. 2014. Grain Piles Up, Waiting For A Ride, As Trains Move North Dakota Oil. New York Times. http://www.nytimes.com/2014/08/26/us/grain-piles-up-waiting-for-a-ride-as-trains-move-north-dakota-oil.html

A rail transportation alternative could require the design and construction of very large rail car loading and offloading facilities, lateral service lines, and ancillary facilities necessary to support the requisite volumes of crude, requiring significant land acquisition and permanent conversion of agricultural land to industrial. Use of rail would require a completely different project design than that currently proposed for the DAPL Project. To conduct a simplified analysis, Dakota Access assumed that the Supply Line would incorporate the same aforementioned tank terminal locations with a configuration that would make the planned Epping tank terminal contain the largest storage capacity and the site of all DAPL Project rail facilities. Dakota Access also assumed that rail transportation providers would transport the same crude volumes as the DAPL Project demands from North Dakota to Patoka, Illinois.

Assuming a carrying capacity of 600 barrels per car, a total of 750 rail cars would be required to depart the tank terminal daily to transport 450,000 barrels of crude to its final destination. Loading and offloading 750 rail cars in a day would require servicing more than 31 rail cars per hour. With an assumption of 125 rail cars per train, 6 trains would have to depart the tank terminal every day; with 10 to 12 trains currently leaving the state per day carrying Bakken crude,[10] the DAPL Project would represent a 50 to 60 percent increase in the number of trains transporting crude oil out of the state, and thus likely exacerbate the already existing issues with delays.

From a safety standpoint, railroad transport consistently reports a substantially higher number of transportation accidents than pipelines.[11] A series of major accidents taking place in 2013 to 2014 in Canada and the United States has heightened concern about the risks involved in shipping crude by rail.[12]

While rail tanker cars are a vital part of the short-haul distribution network for crude oil, pipelines are a more reliable, safer, and more economical alternative for the large volumes transported and long distances covered by the DAPL Project. As such, the rail transportation alternative is not considered a viable alternative.

3.1.4 THIRD PARTY INFRASTRUCTURE

With Williston Basin oil production in North Dakota surpassing one million bpd in April 2014,[13] transportation of Williston crude oil has struggled to keep pace with production. Several new projects are in various stages of development and were considered prior to the design of the DAPL Project by Energy Transfer Company. These projects include the following:

Plains Bakken North Pipeline

The Plains Bakken North Pipeline went in service in May 2014. It was constructed with a 40,000 bpd capacity that could be expanded up to 70,000 bpd and it consists of approximately 79 miles of new 12-inch diameter pipeline extending from Trenton, North Dakota, to the Plains' Wascana system near

[10] Horwath, B. and Owings, C. 2014. No Keystone XL Means More Oil By Rail, Report Says. Oil Patch Dispatch. http://oilpatchdispatch.areavoices.com/2014/01/31/no-keystone-xl-means-more-oil-by-rail-report-says/

[11] US DOT. Transportation Accidents By Mode. Office of the Assistant Secretary For Research and Technology. http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_02_03.html

[12] Fritelli, J. 2014. U.S. Rail Transportation of Crude Oil: Background and Issues for Congress. Congressional Research Service. http://fas.org/sgp/crs/misc/R43390.pdf.

[13] Kringstad, J. 2014. Energy Development and Transmission Committee. North Dakota Pipeline Authority. https://ndpipelines.files.wordpress.com/2012/04/kringstad-edt-7-8-2014.pdf.

Outlook, Montana.[14] With the transport of 70,000 bpd, the Plains Bakken North Pipeline does not meet the volumetric requirements (450,000 bpd) or geographic needs (i.e., Patoka, Illinois, where markets in the Midwest, and Gulf Coast may be accessed) of the DAPL Project. As such, it is not considered a viable alternative to the DAPL Project.

Butte Loop

As of July 2014, the Butte Loop system was scheduled to go in service in the third quarter of 2014 to enhance the Butte Pipeline, providing a transport capacity of 110,000 bpd of crude oil to Guernsey, Wyoming (no updates available as to actual in-service date). The Butte Loop/Butte Pipeline does not meet the purpose and needs of the DAPL Project and is therefore not considered a viable alternative.

Highland Double H

The Double H Pipeline is a 12-inch pipeline that will cover a span of 492 miles from Dore, North Dakota, to Guernsey, Wyoming. The Double H Pipeline is planned to become operational in January 2015 with an initial capacity of approximately 50,000 bpd.[15] The limited geographic scope and volume transported by the Double H Pipeline do not meet the overall goals of the DAPL Project and Dakota Access' obligations to shippers, and therefore is not considered a viable alternative.

North Dakota Pipeline Company – Sandpiper

The Sandpiper Pipeline Project will be a 612-mile, 24-inch diameter (expanding to 30-inch diameter in Minnesota) pipeline commencing near Tioga, North Dakota, continuing across Minnesota, and terminating in Superior, Wisconsin.[16] The transport capacity from the Williston Basin will be 225,000 bpd. While the Sandpiper Project would serve a similar purpose as that of the DAPL Project, (i.e., reliable transportation of domestic crude to domestic markets via pipeline) the transport capacity and the Sandpiper Project's terminus point at Superior, Wisconsin, do not meet the volumetric or geographic goals and obligations of the DAPL Project. Therefore, the Sandpiper Project is not considered a viable alternative.

3.1.5 ROUTE ALTERNATIVES

Dakota Access' preference for route selection is to collocate and run parallel with new and existing infrastructure (e.g., pipelines, utility corridors, railway, etc.) to the extent practicable. The criteria used to select the proposed route included (among others):

[14] Petroleum News Bakken. 2012. Bakken Report: Plains Finding Niches in the Bakken. http://www.petroleumnews.com/pntruncate/312081290.shtml.

[15] Tallgrass Energy Partners. 2014. Tallgrass Pony Express Pipeline and Hiland Crude Announce Joint Open Session. MarketWatch. http://www.marketwatch.com/story/tallgrass-pony-express-pipeline-and-hiland-crude-announce-joint-open-season-2014-11-17

[16] Enbridge. 2014. Sandpiper Pipeline Project. http://www.enbridge.com/SandpiperProject.aspx.

- the ability to collocate where possible;
- minimize safety concerns;
- avoidance and minimization of environmentally sensitive areas (i.e., wetlands, federally listed threatened and endangered species, cultural resources, seasonal restrictions, and environmental agency permitting/coordination requirements);
- avoidance of indigenous and federally owned lands, and other public lands to the maximum extent possible;
- avoidance of other high-consequence areas as defined by PHMSA and other exclusion/avoidance zones as defined by North Dakota Public Service Commission;
- improved constructability and efficient operation; and
- maintaining economic viability of the DAPL Project.

From a logistical standpoint in addition to shippers' demands, the initial delivery point of the product to the existing tank hub in Patoka, Illinois, is different than any other major pipeline carrying crude from the Bakken; as such, there is a higher percentage of greenfield sites than Dakota Access would typically use. Table 3.1.5-1 indicates the locations in which the Supply Line is collocated, the types of infrastructure with which collocation occurs, and the overall percent of collocation; and Table 3.1.5-2 indicates the collocation information as it applies to the Mainline. Refer to Exhibit H for these tables.

The initial scope of the pipeline was to get from the supply area to Patoka, Illinois, utilizing desktop information relative to the above listed criteria. The most significant route revisions occurred early in the routing process and occurred primarily due to attempts to avoid tribal and federally owned lands, minimize environmental impacts, avoid environmentally sensitive areas, and maximize collocation (i.e., Lake Oahe crossing, on tribal owned lands, etc.). Upon maximization of available desktop data, more frequent although minor reroutes took place due to other criteria. Examples of these minor route deviations were shifts to improve constructability and avoidance of features identified during field surveys and upon receipt of aerial photography Dakota Access procured from an August 2014 flyover of the proposed DAPL Project. For example, Route 1 as depicted on the map varies drastically from the subsequently developed Routes 2 and 3 (Figure 3.1.5-1).

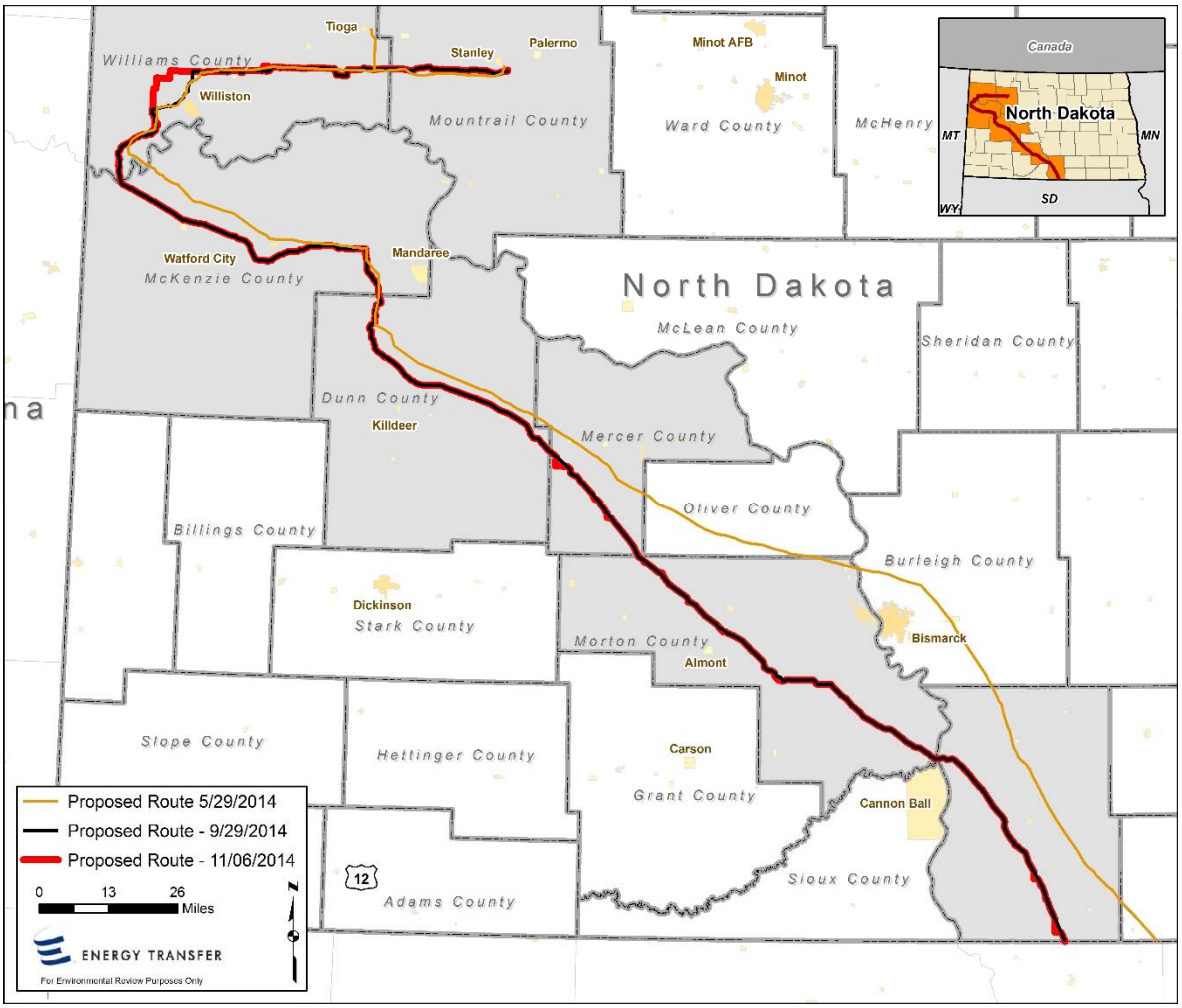

Figure 3.1.5-1: Routes Considered for DAPL Project

The most notable reroutes implemented throughout the routing process were:

Initial Route Optimization

To identify an initial route, Dakota Access utilized a sophisticated and proprietary Geographic Information System (GIS) based routing program to determine the preferred pipeline route based on multiple publicly available and purchased datasets. Datasets utilized during the DAPL Project routing analysis included engineering (e.g., existing pipelines, railroads, karst, and powerlines), environmental (e.g., critical habitat, fault lines, state parks, national forests, and national registry of historic places), and land (e.g., dams, airports, cemeteries, schools, mining, and military installations).

Each of these datasets was weighted based on the risk (e.g., low, moderate, or high) associated with crossing or following certain features. In general, the preferred route for the pipeline would follow features identified as low risk, avoid or minimize crossing features identified as moderate risk, and exclude features identified as high risk. For example, the existing pipelines dataset was weighted as a low risk feature so that the routing tool followed existing pipelines to the extent possible to minimize potential impacts. An example of a high risk feature is the national parks dataset. Since national parks were

weighted for the DAPL Project as high risk, the GIS routing program excluded any national parks from the preferred pipeline route to avoid impacts to these federal lands.

The routing program utilized the weighted datasets to produce the preferred baseline route. Once the baseline route was established, reroutes were required to address various criteria, further discussed below and in Section 9.5.

City of Williston Reroute

Consultation with the City of Williston led to discussions about future municipal growth, including residential and commercial development, highway development plans, and plans for the construction of a new airport. As a result of this consultation, the DAPL Project route was shifted approximately 6.5 miles west of its original alignment.

Watford City Reroute

Consultation with Watford City officials allowed for the development of an understanding of the location of a highway soon to be constructed to bypass the city. The consultation and subsequent meetings led to an approximately 2 mile shift in the original alignment.

4.0 SCHEDULE

4.1 OBTAINING CERTIFICATE OF CORRIDOR COMPATIBILITY

Dakota Access requests to obtain a Combined Certificate of Corridor Compatibility and Route Permit in the second quarter of 2015.

4.2 OBTAINING ROUTE PERMIT

Dakota Access requests to obtain a Combined Certificate of Corridor Compatibility and Route Permit in the second quarter of 2015.

4.3 COMPLETING RIGHT-OF-WAY ACQUISITION

Dakota Access commenced ROW acquisition on September 2014 and is expected to complete acquisition on February 2015.

4.4 STARTING CONSTRUCTION

Dakota Access plans to begin construction on the DAPL Project upon receipt of regulatory approval and applicable permits in third quarter of 2015.

4.5 COMPLETING CONSTRUCTION

Completion of construction is anticipated to occur in August 2016.

4.6 TESTING OPERATIONS

Testing of the pipeline and tank facilities is expected to be conducted during third quarter of 2016.

4.7 COMMENCING OPERATIONS

The in-service date for the DAPL Project is no later than October 31, 2016.

5.0 ENVIRONMENTAL STUDIES

Dakota Access defined its study area as a 1-mile-wide corridor centered on the pipeline and on along the proposed tank terminal sites. Desktop analyses along the 1-mile study area for cultural resources, wetlands and waterbodies, and habitat assessment were conducted utilizing GIS mapping, reviewing agency databases, peer-reviewed articles, and internet research. Following the desktop analysis, the appropriate agencies were consulted for cultural and biological resources (see Section 6.0).

Field studies for the DAPL Project focused on a 400-foot wide environmental survey corridor, centered on the pipeline, where survey permissions allowed. Field surveys for the tank terminal sites were also conducted where survey permissions were allowed.

Dakota Access contracted specialized consultants to perform cultural, wetland and waterbodies, and habitat assessment surveys of the project route in North Dakota. Dakota Access' environmental consultant conducted cultural field surveys, wetland and waterbody surveys, and habitat assessment surveys.

This application discusses field data that has been completed through November 2014. Cultural, wetland and waterbody, and habitat assessment will continue in 2015 (and 2016 as needed), during the appropriate survey windows (e.g. wetland delineations will occur within the growing season). Additional surveys are planned for 2015 and 2016, including tree and shrub surveys, eagle nest surveys, raptor nest surveys, and species-specific surveys. Species specific surveys will be conducted in areas where potential habitat was located previously by field crews, where occurrence data exists, and in accordance with U.S. Fish and Wildlife Service (USFWS), COE, North Dakota Game and Fish Department (NDGF), and North Dakota Parks and Recreation Department (NDPRD) consultations for Northern Long-eared bats and Dakota skipper.

5.1 CULTURAL RESOURCE INVENTORY

Class I literature reviews of the DAPL Project route were conducted by Dakota Access' environmental consultant and was followed by Class II reconnaissance inventory and Class III intensive cultural resource inventory surveys within the 400-foot-wide environmental survey corridor and at three of the six proposed tank terminal sites. Dakota Access' environmental consultant performed cultural surveys, which commenced in August 2014, and continued through November 8, 2014, when snowfall and frozen ground inhibited surveys.

Dakota Access began conducting cultural resource surveys within the 400-foot environmental survey corridor on August 12, 2014. As of November 8, 2014, archaeological and historic structure inventories have been completed for approximately 66 percent of the route requiring survey to identify previous historical resources. Following the completion of seasonal investigations, Dakota Access will report findings to the North Dakota State Historical Preservation Office (NDSHPO).

For portions of the route lacking sufficient survey coverage from previously executed cultural resource inventory surveys and projects, Dakota Access initiated Class II reconnaissance inventory and Class III intensive cultural resources inventory surveys along the environmental survey corridor with professional cultural resource staff supplied by Dakota Access' environmental consultant. Dakota Access directed their environmental consultant to conduct the cultural resource investigations according to the guidelines developed by the NDSHPO in 2012.

The primary focus of the 2014 Class II/Class III inventory surveys was the identification of previously undocumented cultural resources coupled with an assessment of both their boundaries and future research potential. Additional field investigative efforts were concentrated on the re-identification of previously documented cultural resource sites evident on the surface of the 400-foot environmental corridor to assess reported site boundaries and current site conditions; no subsurface investigations were conducted at previously documented cultural resource sites.

Previously recorded and newly documented cultural resource sites will be assessed according to the criteria utilized by federal agencies when evaluating eligibility for listing on the National Register of Historic Places (NRHP). Standard field survey methods included pedestrian survey along the entire environmental survey corridor and subsurface shovel testing at specific locations determined by ground surface visibility and other factors.

Surveys conducted to date have resulted in the documentation of approximately 150 archaeological sites, historic structure sites, isolates, and site leads. Dakota Access will complete the surveys on outstanding parcels in 2015. Additional studies may involve the formal evaluation of some archaeological sites and historic structures for their eligibility for listing on the NRHP.

Dakota Access prefers to avoid inventoried archaeological sites and historic structures. In the event that Dakota Access is unable to avoid project impacts to a site through design or construction efforts, Dakota Access will conduct formal evaluations in consultation with the NDSHPO and seek resolution through mitigation for those sites that meet the criteria for listing on the NRHP.

Dakota Access will prepare technical reports for the DAPL Project's cultural resources studies and will submit them to the NDSHPO for their review and comment. In order to protect these sensitive resources Dakota Access will not submit information about the location of historic properties with this application, unless specifically requested by either NDSHPO or the Commission and agreed upon by both. For this application and any other public filings, only the title page and abstract of cultural resources technical reports will be submitted as documentation of the surveys and evaluations. NDSHPO review and comment letters for technical reports will be submitted as supplemental filings to this application.

5.2 WETLAND AND WATERBODY INVENTORY

Wetland and waterbody surveys were conducted within the environmental survey corridor and tank terminal sites. Wetland determination methodologies as described in the U.S. Army Corps of Engineers (COE) 1987 Wetland Delineation Manual and the COE Great Plains Regional Supplement were implemented. Wetland and waterbody delineation surveys began in August 2014 and concluded in November 2014 when snowfall and frozen ground inhibited surveys. Dakota Access consulted with the COE-Omaha District, which has jurisdiction over construction projects affecting "waters of the United States" in North Dakota, including wetlands and waterbodies that are crossed by the proposed project route.

The COE Nationwide Permit (NWP) 12 authorizes utility line activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the U.S., provided the activity does result in the loss of greater than 0.5 acre of waters of the U.S. for each single and complete project. The COE has indicated that they intend to utilize NWP 12 as the basis for its analysis and permitting mechanism. The installation of the pipeline will result in no net loss to waters of the U.S.; only temporary impacts during construction and some wetland conversion from forested to non-

forested over the maintained easement will take place. The location and design of the tank terminal facilities have not been finalized. The layout of the tank terminal facilities will minimize permanent wetland impact.

Dakota Access retained experienced consultants to perform wetland and waterbody delineations of the proposed route within an environmental survey corridor measuring 400 feet centered on the proposed centerline and were initiated in August 2014. The delineation protocols are in accordance with appropriate federal and state methodologies. These surveys will provide quantitative, qualitative, and location information to be submitted to the COE.

As of November 2014, field delineations have been completed for approximately 63 percent of the environmental survey corridor. A wetlands and waterbodies summary is provided as Exhibit D. The summary includes wetlands and waterbodies that are not crossed by the DAPL Project route, but were part of a previous route no longer being considered. It is anticipated that the majority of the delineated wetlands will be identified as isolated basins with no hydrologic connection to waters of the United States and therefore considered non-jurisdictional with respect to COE authority. Wetland surveys will continue in 2015 after the growing season begins and an updated wetland delineation report will be provided upon completion. The proposed pipeline crosses 437 wetlands and 211 waterbodies. Additional details regarding wetlands and waterbodies are included in Exhibit D and mapping is provided in Exhibit A.4.

Table 5.2-1
Summary of Delineated Wetlands and Waterbodies

Pipeline Segment	Feature type	Number of Features Crossed	400' Survey Corridor Impacts (acre)	Temporary Workspace Impacts (acre)
Supply Line	**Wetlands**			
	PFO	2	3.582	0.467
	PUB	34	21.776	4.137
	PEM	170	137.566	33.780
	Waterbodies			
	Perennial	23	21.877	3.708
	Intermittent	29	3.787	0.830
	Ephemeral	14	0.740	0.150
Mainline	**Wetlands**			
	PFO	2	8.913	0.479
	PUB	26	3.295	0.473
	PEM	203	95.803	21.252
	Waterbodies			
	Perennial	57	74.159	16.912
	Intermittent	54	9.541	2.190
	Ephemeral	34	1.353	0.357

For a more detailed discussion on the delineated wetlands and waterbodies, estimates of temporary wetland impacts, and mitigation measures that will be implemented during construction, refer to Exhibit D. Upon request, Dakota Access will submit copies to the Commission of Project submittals to the COE.

5.3 HABITAT ASSESSMENT

Habitat assessment surveys were conducted within the environmental survey corridor and the locations of the six tank terminal sites. Habitat assessments for 10 federally listed species were evaluated within the environmental survey corridor and the 6 tank terminal sites. Surveys for potential habitat began in August 2014 and concluded in October 2014 when the growing season terminated. As of December 2014, habitat assessment surveys have been completed on approximately 66 percent of the environmental survey corridor.

A wide variety of flora is present within North Dakota's diverse habitats that are along the DAPL Project route. Agricultural lands are a common type of land cover along the DAPL Project route and encompass crops that include wheat (e.g., winter, Durham, and spring), corn, soy beans, sunflowers, flaxseed, alfalfa, and canola.[17] Natural habitats within the State include prairie, wetlands, riparian areas, woodlands, and badlands.

Prairie habitats are comprised of grasses, forbs, shrubs to a lesser extent, but lack tree species. Dominant grass and forb species in North Dakota include bluestems species (*Andropogon spp.* and *Schizachyrium spp*.), needle grass (*Heterostipe spp.*), western wheatgrass (*Pascopyrum spp*.), blueflower (*Campanula spp.*), coneflower (*Echinacea spp.*) and asters (*Ratibida spp.* and *Gaillardia spp*.).[18]

Wetlands are unique habitats that are saturated with water, either on a permanent or seasonal basis, and contain a distinctive aquatic vegetation. Wetlands in North Dakota can have forested, scrub-shrub, or emergent vegetation cover types; however, emergent wetlands were the most commonly documented wetland along the DAPL Project route (Exhibit D). Common emergent wetland species include rushes (*Juncus spp.*), sedges (*Carex spp.*), cattails (*Typha spp.*), cordgrass (*Spartina spp.*), and barley (*Hordeum spp*.).

The vegetation within riparian areas is heavily influenced by its abutting river or stream and tend to be among one of the most productive ecosystems in North Dakota.[19] Riparian areas typically consist of interspersed phyla, including deciduous trees, shrubs, grasses, and forbs. The most common riparian trees in North Dakota along the Missouri River and Little Missouri River are aspens (*Populus spp.*), box elder (*Acer negundo*), and ash trees (*Fraxinus spp.*); common shrubs include chokeberry (*Aronia spp.*) and

[17] U.S. Department of Agriculture. 2014. National Agriculture Statistics Service. http://www.nass.usda.gov/ Accessed November 18, 2014.
[18] PlantNative. 2004. Native Plant List for North Dakota, South Dakota & Western Minnesota. http://www.plantnative.org/rpl-dakota.htm. Accessed November 20, 2014.
[19] North Dakota State Government. Undated. Habitats of North Dakota – Quick Links. http://www.ndstudies.org/resources/habitats/quick-facts.html. Accessed November 17, 2014.

junberry (*Amelanchier spp.*); common grasses and forbs include rushes (*Juncus spp.*), sedges (*Carex spp.*), and bluestem species (*Andropogon spp.*).[20]

Woodland habitats are not a significant piece of the North Dakota landscape (they only comprise about 2 percent of the land cover) and include trees, shrubs, vines, grasses, and forbs.[21] Forest types in North Dakota are the Elm-Ash-Cottonwood, Aspen-Birch, Burr Oak, and Ponderosa Pine-Rocky Mountain Juniper complexes, however, the DAPL Project route only crosses through the Elm-Ash-Cottonwood complex.[22]

Badlands are characterized by steep slopes of sedimentary rock, sparse vegetation, and high drainage densities (i.e. ravines, gullies, and drainage patterns). Common vegetation in the badlands contains drought-tolerant grasses, forbs, shrubs and trees. Common grass species consists of grama grasses (*Bouteloua spp.*), needle grass (*Heterostipe spp.*), and bluestem species (*Andropogon spp.*); dominant forbs include yucca (*Yucca spp.*), coneflower (*Echinacea spp.*), and prickly pear cactus (*Opuntia spp.*). Common shrub species in the badlands are sagebrush (*Artemisia spp.*), buckbrush (*Ceanothus spp.*), and chokeberry (*Aronia spp.*); tree species are comprised of juniper (*Juniperus spp.*), aspens (*Populus spp.*), and ash (*Fraxinus spp.*).[23]

5.3.1 TREE/SAPLING/SHRUB INVENTORY

Tree, shrub, and woody vegetation surveys were not conducted during the 2014 field survey effort but are planned to be completed prior to construction. Conducting these surveys will ensure that an accurate, up to date inventory of woody vegetation is collected for mitigation purposes, as minor reroutes may be incurred. In addition to reroutes, other dynamics like land use alteration and environmental factors such as storm events, flooding, or drought can affect the presence of woody vegetation over several growing seasons. The sampling plan will be developed by WEST in the winter/spring of 2015, which will describe the proposed sampling protocols for surveying. Surveys will be targeted to a subset of areas where tree draws, shelter belts, riparian areas, and native habitat are present.

5.3.2 WILDLIFE INVENTORY

A wide variety of wildlife species are resident or seasonal visitors to the DAPL Project area. Common mammals include raccoon, red fox, coyote, pronghorn antelope, elk, and white-tailed and mule deer. Various song birds are present, such as western meadowlark, LeConte's sparrow, and horned lark, as are as raptors such as bald and golden eagles and red-tailed and rough-legged hawks.

Desktop analysis and field-based habitat assessments were begun along the proposed alignment to aid in identifying sensitive species and their critical habitat. The desktop analysis was conducted to further identify potential habitats within the DAPL Project survey corridor, such that field-based habitat

[20] Herman, G. and L. Johnson. 2008b. Habitats of North Dakota, Riparian Areas. North Dakota Game and Fish Department, Bismarck, ND. http://www.ndstudies.org/pdf/Riparian_web.pdf

[21] Herman, G. and L. Johnson. 2008c. Habitats of North Dakota, Woodlands. North Dakota Game and Fish Department, Bismarck, ND. http://www.ndstudies.org/pdf/woodlands_web.pdf

[22] Herman, G. and L. Johnson. 2008c. Habitats of North Dakota, Woodlands. North Dakota Game and Fish Department, Bismarck, ND. http://www.ndstudies.org/pdf/woodlands_web.pdf

[23] Herman, G. and L. Johnson. 2008a. Habitats of North Dakota, Badlands. North Dakota Game and Fish Department, Bismarck, ND. http://www.ndstudies.org/pdf/Badlands_web.pdf

assessments could be conducted in targeted areas. This desktop analysis indicated there were approximately 7,700 acres of grassland habitat within the 400-foot survey corridor. The 2014 field survey effort was conducted pursuant to applicable habitat assessment protocols and assessed potential habitat within the DAPL Project corridor where survey permission was granted until vegetation was no longer suitable for assessment. The field efforts yielded potentially suitable habitat for the least tern, piping plover, Dakota skipper, and black-footed ferret (via prairie dog towns) (see Exhibits A.4 and E.3). Approximately 4,615 acres were surveyed during the 2014 season. Some areas were not assessed in 2014 due to either lack of survey access or to lack of identifiable vegetation at the end of the survey season. Field-based habitat assessments and surveys for individual species will continue in the 2015 field season.

5.3.3 FEDERALLY PROTECTED SPECIES REVIEW

A desktop analysis was conducted to obtain a list of federally-listed threatened, endangered, proposed, and candidate species that may occur along the DAPL Project route in North Dakota. Using the USFWS Endangered Species Database,[24] a search was completed for each county that the DAPL Project crosses and includes the following counties: Mountrail, Williams, McKenzie, Dunn, Mercer, Morton, and Emmons Counties, North Dakota. Ten federally listed species under the Endangered Species Act (ESA) are located along the DAPL Project route (see Table 5.3.3-1). Designated critical habitat also exists in the DAPL Project area for the piping plover and Dakota skipper (see Table 5.3.3-2). Dakota Access will continue to coordinate impact assessments with the USFWS for the DAPL Project.

[24] USFWS. 2014b. Endangered Species Database. http://www.fws.gov/endangered/. Accessed November 18, 2014.

Table 5.3.3-1
Status and Occurrence of Federally Listed Endangered, Threatened, Candidate, & Proposed Species

Species	Status[1]	County						
		Mountrail	Williams	McKenzie	Dunn	Mercer	Morton	Emmons
Least Tern (interior population)	E	X	X	X	X	X	X	X
Piping Plover (Northern Great Plains Population)	T	X	X	X	X	X	X	X
Red Knot	PT	X	X	X	X	X	X	X
Whooping Crane	E	X	X	X	X	X	X	X
Sprague's Pipit	C	X	X	X	X	X	X	X
Pallid Sturgeon	E	X	X	X	X	X	X	X
Dakota Skipper	T	X		X	X			
Northern Long-eared Bat	PE	X	X	X	X	X	X	X
Black-footed Ferret	E			X	X	X	X	
Gray Wolf	E[2]	X	X	X	X	X	X	

[1] E = Endangered, T = Threatened, P = Proposed, C = Candidate

[2] The gray wolf is listed as Endangered in western ND (south and west of the Missouri River upstream to Lake Sakakawea and west of the centerline of Highway 83 from Lake Sakakawea to the Canadian border); wolves in eastern ND are part of the Great Lakes Distinct Population Segment that was delisted in January 2012 (http://ecos.fws.gov/tess_public/SpeciesReport.do?lead=6&listingType=L)

Source: USFWS. 2014b. Endangered Species Database. Available at: http://www.fws.gov/endangered/. Accessed November 2014.

Table 5.3.3-2
Occurrence of Federally Listed Critical Habitats

Species	Status[1]	County						
		Mountrail	Williams	McKenzie	Dunn	Mercer	Morton	Emmons
Piping Plover	CH	X	X	X	X	X	X	X
Dakota Skipper	CH			X				

[1] CH = Critical Habitat

Source: USFWS. 2014b. Endangered Species Database. Available at: http://www.fws.gov/endangered/. Accessed November 2014.

Interior Least Tern

In North Dakota, the interior least tern (*Sterna antillarum*) utilizes sparsely vegetated sandbars on the Missouri River. Birds nest, raise young, and forage on barren river sandbars. In North Dakota, the least tern is found primarily on the Missouri River from Garrison Dam south to Lake Oahe and also on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea. Approximately 100 pairs breed in North Dakota during the summer before flying to coastal areas of Central and South America and the Caribbean Islands. Field surveys identifying least tern suitable habitat will continue in the 2015 field season in coordination with USFWS consultations.

Migrating and breeding/nesting birds may be potentially impacted by human presence and construction related noise, equipment, and activities. Temporary disturbance to migrating individuals is unlikely to have a measurable or detectable effect on the reproductive capacity or survival to migrating individuals. Breeding birds have the potential for adverse impacts if construction activities disturb nesting individuals to the extent that they are prevented from establishing or maintaining a nest or rearing a brood. Individual birds, their nests, eggs, or chicks may be killed if construction activities take place in a wetland utilized by breeding birds. By timing construction activities to take place outside of the nesting season, impacts to nests, eggs, chicks, and breeding adults can be avoided.

Piping Plover

Piping plovers (*Charadrius melodus*) are small shore birds found along the Missouri and Yellowstone River systems and in large wetlands. In the Northern Great Plains, piping plovers use shorelines of prairie freshwater lakes, alkali wetlands, and major river systems, including the Missouri River in North Dakota, as primary courtship, nesting, foraging, sheltering, brood-rearing, and dispersal habitat. The USFWS has designated piping plover critical habitat in the Missouri River system throughout North Dakota; critical habitat is present in all counties crossed by the DAPL Project. Field surveys identifying piping plover suitable habitat will continue in the 2015 field season in coordination with USFWS consultations.

Impacts to piping plovers include disturbance of migrating and nesting individuals due to construction activities. Temporary disturbance to migrating individuals is not anticipated to have a measurable or detectable effect on their reproductive capacity or survival. Potential impacts on breeding plovers from human presence and noise from equipment has the potential to disturb breeding pairs, preventing them from establishing or maintaining a nest or rearing a brood in areas where construction takes place in suitable habitat. Individuals may also be killed or injured and eggs and nests may be crushed if construction takes place in a wetland where piping plovers are breeding. As such, the potential for an adverse impact exists. By timing construction activities to occur outside the nesting season, impacts on breeding adults, chicks, eggs, and active nests would be avoided. Alternatively, impacts to breeding birds, their nests, and young can be avoided by conducting pre-construction surveys to confirm plover and nest absence immediately prior to the onset of construction activities.

Rufa Red Knot

The red knot (*Calidris canutus rufa*) is a large sandpiper noted for its long-distance migration between summer breeding grounds in the Arctic and wintering areas at high latitudes in the Southern Hemisphere. Some red knots wintering in the northwestern Gulf of Mexico migrate through interior North America during both spring and fall and use stopover sites in the Northern Great Plains. The species relies

heavily on exposed substrate at wetland edges for stopover habitat; the suitability of a wetland for red knots depends on water levels and may vary annually. Additionally, red knots have also been reported to forage in cultivated fields when migrating through interior North America. Because construction will be rolling through North Dakota over the course of 2016, and the species is a migrant, no impacts are expected.

General DAPL Project-based conservation and mitigation measures (i.e., collocation with other pipelines and utilities to minimize environmental disturbance, reduction of ROW through sensitive habitats, changes to routing, utilizing clearing and boring techniques known to reduce impacts, and post-construction restoration techniques that restore pre-construction contours to disturbed areas) would minimize potential impacts on red knot individuals and their habitat. Additionally, it is recommended that construction be stopped if red knots are sighted in the construction area; work should not resume until the birds have left the area. Any sightings within the construction corridor would be immediately reported to the USFWS. As part of pre-construction activities, environmental training of contractors and construction crews should be undertaken to provide information on proper identification of the species and correct procedures regarding a sighting. To avoid long-term impacts on the red knot's migratory stopover habitat, wetlands crossed by the Project would be restored to pre-construction contours.

Whooping Crane

Whooping cranes (*Grus Americana*) embark on a bi-annual migration from summer nesting and breeding grounds in Wood Buffalo National Park in northern Alberta to the barrier islands and coastal marshes of the Aransas National Wildlife Refuge on the Gulf Coast of Texas. Twice yearly in the spring and fall, the cranes migrate along the Central Flyway, a migratory corridor approximately 220 miles wide and 2,400 miles in length and includes eastern Montana and portions of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and eastern Texas (USFWS 2014i). During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding in harvested grain fields. Approximately 75 percent of the whooping crane state sightings in North Dakota occur within the Central Flyway. However since construction consists of a narrow corridor of disturbance along the route, no impact to the migrant species is anticipated as suitable habitat exists through the general region and project area.

General Project-based conservation and mitigation measures (i.e., collocation with other pipelines and utilities to minimize environmental disturbance, reduction of ROW through sensitive habitats, changes to routing, utilizing clearing and boring techniques known to reduce impacts, and post-construction restoration techniques that restore pre-construction contours to disturbed areas) would minimize potential impacts on whooping crane individuals and habitat. Additionally, if a whooping crane is sighted within the construction corridor, or if the USFWS notifies Dakota Access of a whooping crane sighting within 1 mile of the construction ROW, construction activities would cease until the individual(s) have left the area. Any whooping crane sightings would be immediately reported to the USFWS and the NDGFD. As part of pre-construction activities, environmental training of contractors and construction crews should be undertaken to provide information on proper identification of the species and correct procedures regarding a sighting.

Sprague's Pipit

The Sprague's pipit (*Anthus spragueii*) is a small ground-dwelling songbird of open landscapes, one of two North American members of the genus. Grassland natives that breed in the Northern Great Plains, pipits migrate through the Central Great Plains and overwinter in the southern U.S and northern

Mexico. The species prefers dry, mixed-grass habitats dominated by native vegetation of sparse or intermediate density for breeding, but they have also been less-commonly observed performing territorial displays in non-native grasslands and nesting in non-native hayfields in part of their range.[25,26,27,28] Overall, vegetation structure appears to be an important predictor of species occurrence.[29] Field surveys identifying Sprague's pipit suitable habitat will continue in the 2015 field season in coordination with the USFWS consultations.

The Sprague's pipit is currently listed as a candidate species in all counties crossed by the DAPL Project. Candidate species are not protected by the federal ESA until they are listed. However, protection of this species falls under Migratory Bird Treaty Act.

Pallid Sturgeon

The pallid sturgeon's (*Scaphirhynchus albus*) preferred habitat includes the benthic environment associated with swift waters of large turbid, free-flowing rivers with braided channels, dynamic flow patterns, periodic flooding of terrestrial habitats, and requiring extensive micro habitat diversity. The species inhabits the Missouri and Mississippi Rivers from Montana to Louisiana. Wild Pallid Sturgeon have been noted in the Missouri River downstream from the Fort Peck Dam in Montana to the headwaters of Lake Sakakawea, North Dakota, and downstream from Garrison Dam, North Dakota, to the headwaters of Lake Oahe, South Dakota.[30] The DAPL Project crosses the Missouri River once southwest of Trenton, North Dakota, and again at Lake Oahe.

Impacts to pallid sturgeon breeding and foraging habitat are not anticipated. As the pipeline will be installed utilizing HDD methods to cross the Missouri River at both locations and no dredging is proposed, DAPL Project activities are not likely to adversely affect the species. Employing environmentally appropriate Best Management Practices (BMPs) would ensure soil erosion and runoff are minimized to the maximum extent possible to prevent siltation of waters. Additionally, a current HDD Contingency Plan will outline mitigation in the case of a release of drilling mud from an HDD operation.

---

[25] Robbins, M.B. and B.C. Dale. 1999. Sprague's Pipit (Anthus spragueii). The Birds of North America Online. A. Poole, ed. Cornell Lab of Ornithology, Ithaca, New York. http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/439. Accessed November 18, 2014.

[26] Dechant, J.A., M.L. Sondreal, D.H. Johnson, L.D. Igl, C.M. Goldade, M.P. Nenneman, and B.R. Euliss. 2003. Effects of management practices on grassland birds: Sprague's Pipit. Version 28MAY2004. Northern Prairie Wildlife Research Center, Jamestown, North Dakota. http://www.npwrc.usgs.gov/resource/literatr/grasbird/sppi/sppi.htm. Accessed November 18, 2014.

[27] Jones, S.L. 2010. Sprague's Pipit (Anthus spragueii) Conservation Plan. U.S. Department of Interior, Fish & Wildlife Service, Washington, D.C.

[28] USFWS. 2013c. Sprague's Pipit Species Assessment and Listing Priority Assignment Form. Environmental Conservation Online System. http://ecos.fws.gov/tess_public/candidateReport!streamPublishedPdfForYear.action?candidateId=30&year=2013. Accessed November 18, 2014.

[29] USFWS. 2013c.. Sprague's Pipit Species Assessment and Listing Priority Assignment Form. Environmental Conservation Online System. http://ecos.fws.gov/tess_public/candidateReport!streamPublishedPdfForYear.action?candidateId=30&year=2013. Accessed November 18, 2014.

[30] USFWS. 2014e. Revised recovery plan for the Pallid sturgeon (Scaphirhynchus albus). Denver, Colorado: Mountain-Prairie Region, U.S. Fish and Wildlife Service.

Dakota Skipper

The Dakota skipper (*Hesperia dacotae*) is a small butterfly characterized by a quick, skipping flight and a short, sturdy body. The species is an obligate of high-quality prairie habitat (i.e., grasslands or discrete patches of habitat within a grassland that are predominantly native and that have not been tilled). The species inhabits dry- and wet-mesic tallgrass and mesic mixed grass prairie remnants characterized by alkaline and composite soils.[31, 32] Only 146 populations are known to be extant in three states and two Canadian provinces.[33, 34, 35, 36] Remaining populations vary in size and density and for the most part are not influenced by dispersal between populations.[37, 38, 39] In North Dakota, the skipper typically occupies both wet-mesic and dry-mesic prairie.[40, 41] Field surveys identifying Dakota skipper suitable habitat will continue in the 2015 field season in coordination with the USFWS consultations.

In the event that suitable occupied habitat were to intersect with the construction ROW, potential impacts to individuals may occur at any time if construction activities take place within the occupied habitat as the species overwinters within the discreet habitat patch. Construction equipment could crush larvae or eggs and collide with or crush adults. Trenching within the habitat could bury eggs, larvae, and adults.

Suitable habitat may be impacted if construction activities take place within occupied suitable habitat, primarily by the removal of native prairie vegetation and trenching untilled grasslands. While native prairie plant species may be replanted, the function of the sod cannot be returned to its original condition once it has been broken, thereby permanently altering the function of the prairie. Even

[31] McCabe, T.L. 1981. The Dakota skipper, Hesperia dacotae (Skinner): range and biology with special reference to North Dakota. Journal of the Lepidopterists' Society 35(3):179-193.
[32] Royer, R.A. and G.M. Marrone. 1992. Conservation status of the Dakota skipper (Hesperia dacotae) in North and South Dakota. U.S. Fish & Wildlife Service. Denver, Colorado. p.44.
[33] Royer, R.A. and G.M. Marrone. 1992. Conservation status of the Dakota skipper (Hesperia dacotae) in North and South Dakota. U.S. Fish & Wildlife Service. Denver, Colorado. p.44.
[34] Cochrane, J.F. and P. Delphey. 2002. Status Assessment and Conservation Guidelines; Dakota Skipper Hesperia dacotae (Skinner) (Lepidoptera: Hesperiidae); Iowa, Minnesota, North Dakota, South Dakota, Manitoba, Saskatchewan. U.S. Fish & Wildlife Service, Twin Cities Field Office, Minnesota. p.80.
[35] USFWS. 2011. Species Assessment and Listing Priority Assignment Form, Dakota Skipper. USFWS, Washington, DC. p. 49.
[36] USFWS. 2013a. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Dakota Skipper and Poweshiek Skipperling. Proposed Rule. 78 Fed. Reg. 63625 (Oct. 24, 2013).
[37] McCabe, T.L. 1981. The Dakota skipper, Hesperia dacotae (Skinner): range and biology with special reference to North Dakota. Journal of the Lepidopterists' Society 35(3):179-193.
[38] Dana, R. 1991. Conservation management of the prairie skippers Hesperia dacotae and Hesperia ottoe: Basic biology and threat of mortality during prescribed burning in spring. Station Bulletin. Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul. p. 63.
[39] Cochrane, J.F. and P. Delphey. 2002. Status Assessment and Conservation Guidelines; Dakota Skipper Hesperia dacotae (Skinner) (Lepidoptera: Hesperiidae); Iowa, Minnesota, North Dakota, South Dakota, Manitoba, Saskatchewan. U.S. Fish & Wildlife Service, Twin Cities Field Office, Minnesota. p.80.
[40] Royer, R.A. and G.M. Marrone. 1992. Conservation status of the Dakota skipper (Hesperia dacotae) in North and South Dakota. U.S. Fish & Wildlife Service. Denver, Colorado. p.44.
[41] Cochrane, J.F. and P. Delphey. 2002. Status Assessment and Conservation Guidelines; Dakota Skipper Hesperia dacotae (Skinner) (Lepidoptera: Hesperiidae); Iowa, Minnesota, North Dakota, South Dakota, Manitoba, Saskatchewan. U.S. Fish & Wildlife Service, Twin Cities Field Office, Minnesota. p.80.

temporary disturbances such as native plant removal may affect the foraging, breeding, and sheltering behaviors of individual skippers, and as such, cause harm, injury, or mortality.

Avoidance of occupied suitable habitat would mitigate potential impacts to both suitable habitat and individual skippers.

Northern Long-eared Bat

The northern long-eared bat (*Myotis septentrionalis*) is a medium-sized bat of the Vespertilionidae family. Approximately 3.0-3.7 inches in length with a wingspan of 9-10 inches, the species derives its name from oversized ears relative to other members of the genus *Myotis*. The species overwinters in small crevices or cracks in hibernacula, such as caves and mines. In summer, the species roosts either singly or in colonies under loose bark or in crevices and hollows in both live trees and snags. A habitat generalist, roost tree selection appears also to be opportunistic; the species uses a variety of tree sizes and species. Migration to summer habitat occurs between mid-March and mid-May.[42,43] In North Dakota, the species is most likely to be found in forested wetlands and riparian areas. A desktop assessment of suitable habitat will be performed to determine the scope of individual surveys for the species in the 2015 field season and will be done in coordination with the ongoing USFWS consultations.

Potential impacts to individual bats may occur if clearing or construction takes place when the species is breeding, foraging, or raising pups in its summer habitat. Bats may be injured or killed if occupied trees are cleared during this active window, and the species may be disturbed during clearing or construction activities due to noise or human presence. Potential mitigation measures may include clearing trees or constructing in occupied areas during the winter months when the species is in hibernation. These effects are localized and are not likely to cause long-term declines in the northern long-eared bat population.

The species is currently proposed by the USFWS as Endangered; a final listing determination will be made April 2, 2015.

Black-footed Ferret

Black-footed ferrets (*Mustela nigripes*) are small members of the Mustelidae family native to the North American shortgrass and mixed grass prairie. Prairie dogs make up approximately 90 percent of the black-footed ferret diet, and as such the species is associated almost exclusively with large complexes of prairie dog towns.[44, 45] Once thought to be extirpated in the wild, captive-born individuals have been reintroduced to 21 sites in Wyoming, Montana, South Dakota, Colorado, Utah, Kansas, New Mexico, and Arizona since 1991.[44, 41] Based on known occurrence data, the black-footed ferret has been recorded in several counties that intersect the environmental survey corridor of the DAPL Project including McKenzie,

[42] USFWS. 2014d. Northern Long-eared Bat Interim Conference and Planning Guidance. January 6, 2014. USFWS Regions 2, 3, 4, 5, & 6. http://www.fws.gov/northeast/virginiafield/pdf/NLEBinterimGuidance6Jan2014.pdf

[43] USFWS. 2014c. Northern Long-eared Bat Fact Sheet. http://www.fws.gov/midwest/endangered/mammals/nlba/nlbaFactSheet.html Accessed November 18, 2014.

[44] USFWS. 2013b. North Dakota Field Office; Black-footed ferret (Mustela nigripes). http://www.fws.gov/northdakotafieldoffice/endspecies/species/black-footed_ferret.htm. Accessed November 18, 2014.

[45] Black-footed Ferret Recovery Implementation Team (BFFRIT). 2011. Black-footed ferret. http://www.blackfootedferret.org/. Accessed November 18, 2014.

Dunn, Mercer, and Morton counties in North Dakota, however the likelihood of encountering the species within the survey area is extremely low[46, 47] Field surveys identifying black-footed ferret suitable habitat will continue in the 2015 field season.

In the event that suitable occupied habitat were to intersect with the construction ROW, potential impacts to individuals may occur at any time. Avoidance of occupied suitable habitat would mitigate potential impacts to both suitable habitat and individual ferrets.

Gray Wolf

A habitat generalist, the gray wolf (*Canis lupus*) historically occupied most habitat types in North America. They show no preference for one cover type over another and successfully utilize alpine, forest, grassland, shrubland, and woodland habitats across their range.[48] Once thought to require wilderness areas with little to no human disturbance, recent range expansions have demonstrated the species' ability to tolerate higher rates of anthropogenic development than previously thought. Given abundant prey and low rates of human-caused mortality, wolves can survive in proximity to human-dominated environments.[49] The gray wolf is listed as Endangered in western North Dakota (south and west of the Missouri River upstream to Lake Sakakawea, and west of the centerline of Highway 83 from Lake Sakakawea to the Canadian border), while wolves in eastern North Dakota are part of the Great Lakes Distinct Population Segment that was delisted by the USFWS in January 2012.[50] North Dakota does not currently have an established breeding population of gray wolves.[51] Observations of wolves are sporadic, and it is believed that these individuals are dispersers from adjacent populations (i.e., from Minnesota and Manitoba).[52,53] Due to the mobile nature and vast available habitat in the region and project area, no impacts to this species is anticipated.

General DAPL Project-based conservation and mitigation measures (i.e., collocation with other pipelines and utilities to minimize environmental disturbance, reduction of ROW through sensitive habitats, changes to routing, utilizing clearing and boring techniques known to reduce impacts, and post-construction restoration techniques that restore pre-construction contours to disturbed areas) would minimize potential impacts on gray wolf individuals and habitat. In addition, if a gray wolf is sighted within the construction corridor, or if the USFWS notifies Dakota Access of a gray wolf sighting within 1 mile of the construction ROW, construction activities would cease until the individual(s) have left the area. Any wolf sightings would be immediately reported to the USFWS and the NDGF.

---

[46] USFWS. 2014b. USFWS Endangered Species Database. http://www.fws.gov/endangered/. Accessed November 18, 2014.
[47] Derby, C. 2014. Personal Communication.
[48] Mech, L.D. 1974. Canis lupus. Mammalian Species 37:1-6.
[49] Fuller, T.K., L.D. Mech, and J.F. Cochrane. 2003. Wolf population dynamics. In Wolves: Behavior, Ecology, and Conservation. L.D. Mech and L. Boitani eds. 161-191. University of Chicago Press, Chicago, IL. pp. 161-191.
[50] USFWS. 2014g. Species Search Results. http://ecos.fws.gov/tess_public/SpeciesReport.do?lead=6&listingType=L. Accessed November 18, 2014.
[51] NDDA (North Dakota Department of Agriculture). 2014. Endangered Species Descriptions. http://www.nd.gov/ndda/program-info/endangered-species-protection/endangered-species-descriptions. Accessed November 18, 2014.
[52] USFWS. 2006. Designating the Western Great Lakes Population of Gray Wolves as a Distinct Population Segment: Removing the Western Great Lakes Distinct Population Segment of the Gray Wolf from the List of Endangered and Threatened Wildlife. 71 Federal Register 15266 (March 27, 2006).
[53] Licht, D.S. and S.H. Fritts. 1994. Gray wolf (Canis lupus) occurrences in the Dakotas. American Midland Naturalist 132:74-81.

5.3.4 U.S. FISH AND WILDLIFE SERVICE MIGRATORY BIRD TREATY ACT

Migratory birds are federally protected by the Migratory Bird Treaty Act (MBTA), which prohibits the taking, killing, possession, and transportation of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. In North Dakota, both native prairie and non-native grasslands provide breeding, nesting, foraging, brood-rearing, and dispersal habitat for many species of migratory birds.

Field surveys identifying suitable habitat for migratory birds will continue in the 2015 field season and consultation on the matter will continue with the USFWS.

5.3.5 BALD AND GOLDEN EAGLE PROTECTION ACT CONSULTATION

Bald and golden eagles are protected by both the MBTA and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits the take of a bald or golden eagle adults, juveniles, or chicks including their parts, nests, or eggs without a permit. Take is defined by the BGEPA as to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA also addresses impacts resulting from human-induced alterations occurring around previously used nesting sites. If an eagle nest is documented along the route during surveys, coordination will continue with the USFWS regarding proper measures to be employed to avoid or minimize impacts.

6.0 CONSULTATION

Dakota Access initiated consultation and coordination with municipal, regulatory, and tribal entities, as well as landowners, within the area that may be affected by the DAPL Project. Consultation and coordination consisted of in person meetings, telephone conferences, mailings, email correspondence, and public meetings to introduce the DAPL Project, provide information about construction and operation of the DAPL Project, and discuss comments and concerns of affected parties.

In September 2014, Dakota Access met with representatives of the Standing Rock Sioux Tribe. Dakota Access also met with the Tribal Historic Preservation Office (THPO) of the Standing Rock Sioux Tribe in October of 2014 to discuss issues the Standing Rock THPO may have with the DAPL Project. Dakota Access shared information regarding the preliminary plans for the DAPL Project and the methodologies being employed to conduct cultural resource investigations. Dakota Access was informed that the Standing Rock Sioux Tribe THPO has not engaged with federal agencies in the establishment or execution of Programmatic Agreements regarding cultural resource investigations and that the Tribe will participate in complete Section 106 Consultations with federal permitting agencies. Discussion of cooperative cultural resource investigations between Dakota Access archaeological field crews and THPO sanctioned tribal monitors was initiated.

Dakota Access also met with representatives of the Three Affiliated Tribes (TAT) Environmental/ROW office in October 2014 to discuss the DAPL Project and issues regarding the establishment of survey permissions on TAT owned land. Conversations regarding the execution of standard DAPL Project easement agreements were initiated. Dakota Access was informed of the process to submit easement applications for review and execution by the Tribal Government.

Dakota Access held five public open houses to provide information on the DAPL Project to interested parties. Dakota Access Project staff were available to discuss the DAPL Project with attendees, maps were available for review, a fact sheet was provided, and information regarding surveys and easements was discussed (see Exhibit G). The open houses were held in Morton County (September 29, 2014), Dunn County (September 30, 2014), Mountrail County (October 1, 2014), McKenzie County (October 2, 2014), and Williams County (November 19, 2014). Dakota Access has also been meeting with County and City officials to introduce the DAPL Project, discuss the proposed pipeline route and tank terminal sites, and review approval processes for the DAPL Project.

6.1 U.S. FISH AND WILDLIFE SERVICE

Dakota Access first reached out to the USFWS North Dakota Field Office in the summer of 2014 about the DAPL Project to confirm protected species, specific locations of concern, as well as any other issues the USFWS may have with the DAPL Project. Dakota Access was informed that the publically available lists for protected species were current, that there is critical habitat for certain species, water fowl protection areas as well as grassland and/or wetland easements in North Dakota and that additional consultation would be required should the route impact any of these areas. Through coordination, research, and intensive planning Dakota Access was able to successfully avoid all USFWS owned lands and easements in North Dakota – confirmation of avoidance is included in Exhibit F. Additionally, the various USFWS regions and field offices that the DAPL Project crosses consulted to determine that the Rock Island Office in Region 3 would take the lead on the DAPL Project with coordination and input from all affected field offices.

6.2 U.S. ARMY CORPS OF ENGINEERS

Dakota Access consulted with the COE-Omaha District - which has jurisdiction over construction projects affecting "waters of the United States" in North Dakota, including wetlands and waterbodies that are crossed by the proposed project route – beginning in the summer of 2014.

In addition to the joint USFWS-COE meetings (see above), consultations with the COE have included frequent and ongoing phone calls and emails, covering not only wetlands and waterbodies crossed, but also crossings of several COE Flowage and Saturation Easements over private lands north of the Missouri River crossing on the Supply Line and COE fee-owned land at the Lake Oahe/Missouri River crossing on the Mainline. Dakota Access is working with the COE to address the COE process to obtain a consent to cross the COE Flowage and Saturation Easements. Similarly, Dakota Access is working with the COE to address the COE process to obtain a COE easement and temporary construction easement to cross the COE owned land at Lake Oahe/Missouri River. Dakota Access will continue to work with and provide the COE required information throughout 2015 for these matters.

6.3 U.S. DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION

Consultation with the Bureau of Reclamation (BOR) was initiated via email on October 28, 2014 (with a subsequent voicemail), regarding crossing select infrastructure in the Buford-Trenton Irrigation District. BOR response received on October 31, 2014, indicated that BOR would have to concur with the proposed plan to cross irrigation works. To procure concurrence, Dakota Access will be required to provide the type and purpose of the pipeline, the pipe material that will be used at BOR crossings, maps showing the alignment and boring locations, engineered drawings indicating how BOR canals will be crossed, and Dakota Access' contact information for response. A copy of the correspondence is included in Exhibit F.

6.4 U.S. NATIONAL PARK SERVICE

Dakota Access consulted with the U.S. National Park Service (NPS) during the summer of 2014 and confirmed that no NPS lands are crossed by the DAPL Project.

6.5 U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE

Dakota Access initiated consultation with Natural Resources Conservation Service (NRCS) November 15, 2014, regarding potential impacts to the Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP), and Grassland Reserve Program (GRP), among others. A response was received November 17, 2014, requesting additional information and indicating that the NRCS currently has GRP/WRP easements in Mountrail, Morton, and McKenzie Counties. An additional response with shapefiles was provided the same day; the NRCS responded again November 17, noting that they had determined there will be no impact to NRCS easements in North Dakota. A copy of the correspondence is included in Exhibit F.

6.6 U.S. DEPARTMENT OF AGRICULTURE, NORTH DAKOTA FARM SERVICE AGENCY

Dakota Access consulted with the North Dakota Farm Service Agency (FSA) in Fargo, North Dakota, on November 17, 2014, as well as with county FSA offices in Mountrail, Williams, McKenzie, Dunn, Mercer, Morton, and Emmons Counties on November 19, 2014. To date, Dakota Access has not received a reply. A copy of the consultation sent to each office is included in Exhibit F.

6.7 U.S. DEPARTMENT OF DEFENSE

Dakota Access initiated consultation with the Department of Defense (DOD) on November 15, 2014. On November 18, 2014, the DOD confirmed that the proposed pipeline passes outside the limits of the DOD's restrictive easement for intercontinental ballistic missile launch facilities; DOD confirmed the DAPL Project does have 3 crossings, but the crossing angles (not less than 30 degrees) and location of buried splices relative to the pipeline (greater than 50 feet) did not raise concerns. No permit is required for the crossings, but DOD requests a "couple day" notice prior to crossing, and a person onsite during excavation. A copy of the correspondence is included in Exhibit F.

6.8 NORTH DAKOTA GAME AND FISH DEPARTMENT

Dakota Access consulted with NDGF Department on November 15, 2014, regarding state conservation priority species, game refuges, game management areas, and Private Land Open to Sportsmen lands. To date, Dakota Access has not received a reply. A copy of the consultation sent to the Department is included in Exhibit F.

6.9 NORTH DAKOTA PARKS AND RECREATION DEPARTMENT

Dakota Access consulted with North Dakota Parks and Recreation Department on November 15, 2014, regarding North Dakota Natural Heritage Inventory system, state parks, recreation areas, natural areas, and land and water conservation fund. To date, Dakota Access has not received a reply. A copy of the consultation sent to the Department is included in Exhibit F.

6.10 NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICE

Dakota Access and retained qualified consultants first reached out to the NDSHPO in June 2014 while performing desktop research for the DAPL Project to obtain information about previously recorded and eligible sites relative to the study area. The NDSHPO attended a preliminary introductory meeting Dakota Access requested with the COE in Bismarck at the end of June 2014. Here Dakota Access communicated that the DAPL Project would go through the state Commission process and that the COE was the lead federal agency based on expected temporary impacts to waters of the United States. The NDSHPO expressed its desire to review all cultural resource survey data collected along the Project irrespective of COE jurisdiction. Dakota Access intends to submit rounds of reports to the NDSHPO, reports respective to Section 106 compliance for areas under COE's jurisdiction via the Clean Water Act in addition to separate reports where cultural surveys were able to be performed in areas where access to surveys was granted. Dakota Access continues to coordinate with the NDSHPO regarding site records, survey methods, schedule, etc.

6.11 NORTH DAKOTA DEPARTMENT OF HEALTH

Dakota Access initiated consultation with the North Dakota Department of Health on November 15, 2014, regarding new developments, the state hazardous waste, water quality, and air quality management programs, as well as protection of groundwater and drinking water aquifers. To date, Dakota Access has not received a reply. A copy of the consultation sent to the Department is included in Exhibit F.

6.12 NORTH DAKOTA DEPARTMENT OF AGRICULTURE

Dakota Access initiated consultation with the North Dakota Department of Agriculture on November 15, 2014 regarding prime farmland and irrigated lands. To date, Dakota Access has not received a reply. A copy of the consultation sent to the Department is included in Exhibit F.

6.13 NORTH DAKOTA STATE WATER COMMISSION

Dakota Access consulted with the North Dakota State Water Commission on November 15, 2014, regarding the Commission's role in the oversight of the management and development of the State's water resources. To date, Dakota Access has not received a reply. A copy of the consultation sent to the Department is included in Exhibit F.

6.14 NORTH DAKOTA DEPARTMENT OF TRUST LANDS

Dakota Access' environmental consultant initiated consultation with the North Dakota Department of Trust Lands in September 2014, and submitted an online application form for "Rights-of-Way, Permits, and Surface Damage Agreements for Well Sites" in order to conduct environmental surveys on North Dakota State Trust Lands. A copy of correspondence including the permit as issued on October 2, 2014, is included in Exhibit F.

6.15 NORTH DAKOTA STATE SOIL CONSERVATION COMMITTEE

Dakota Access initiated consultation with the North Dakota State Soil Conservation Committee on November 15, 2014, regarding the Commission's role in providing assistance to soil conservation districts. To date, Dakota Access has not received a reply. A copy of the consultation sent to the Department is included in Exhibit F.

6.16 COUNTY WATER RESOURCE BOARDS

Dakota Access consulted with the Water Resource Boards of Mountrail, Williams, McKenzie, Dunn, Mercer, Morton, and Emmons Counties on November 15, 2014, regarding their role in the oversight of the management and development of the respective county's water resources. To date, Dakota Access has not received a reply. A copy of the consultation sent to the Department is included in Exhibit F.

6.17 NORTH DAKOTA COUNTY WEED CONTROL BOARDS

Dakota Access consulted with the Weed Control Boards of Mountrail, Williams, McKenzie, Dunn, Mercer, Morton, and Emmons counties on November 17, 2014, regarding their role in the oversight of the management and development of the respective county's weed control board. Dakota Access received a reply from Dunn County on December 5, 2014. A copy of the consultation sent to the boards is included in Exhibit F.

7.0 POLICY CRITERIA

7.1 LOCATION AND DESIGN

The project facilities are being sighted in accordance with the North Dakota Energy Conversion and Transmission Facility Sitting Act (North Dakota Century Code chapter 49-22). Efforts to avoid and minimize environmental and human impacts are ongoing. Surveys for constructability, environmentally sensitive areas, and cultural resources are ongoing. Additionally, discussions with landowners regarding placement of the pipeline on respective tracts is taking place.

Facilities will be constructed and operated according to all applicable regulations. The DAPL Project will meet or exceed state and federal safety requirements and, at a minimum, will be designed in accordance with 49 CFR Part 195. Additionally, pipelines are regulated by the PHMSA.

7.2 TRAINING AND UTILIZATION OF IN-STATE LABOR

Construction of the DAPL Project will require 2,000 to 4,000 workers in North Dakota. Dakota Access is committed to utilizing American labor to construct the DAPL Project. As a matter of practice and Dakota Access' promise as part of this project, Dakota Access will utilize American labor to build the pipeline. Dakota Access is working with the various craft and labor unions both in the DAPL Project regions and nationally to ensure the DAPL Project is constructed by highly qualified and experienced local and regional labor resources. These well-paying construction jobs will create considerable labor income and state income tax revenue – more than $450 million in payments to construction workers and more than $5.9 million in state income tax revenue. Upon authorization, the DAPL Project will put welders, mechanics, electricians, pipefitters, heavy equipment operators, and others within the heavy construction industry to work. Operation of the pipeline and tank facilities will require approximately 25 permanent full-time employees in North Dakota. Dakota Access seeks to recruit local candidates to fill permanent positions to operate and maintain the project. This is often accomplished by advertising in local papers and attending area job fairs to attract employees. Using local personnel is part of our commitment to being a good neighbor along the project and in the area.

7.3 ECONOMIES OF CONSTRUCTION AND OPERATION

Approximately 57 percent of the pipeline will be manufactured in the U.S. and all the pump stations will be assembled and packaged in the U.S. The majority of the remaining major materials will be purchased, manufactured, or assembled in the U.S. contributing to approximately $655.9 million in capital investment in North Dakota.

Construction stage (2015-2016):

- Pipeline length: 358 miles
- Cost of constructing the North Dakota portion: $1.41 billion
- Estimated amount of that cost which will be spent in North Dakota: $655.9 million
- Estimated impact on production and sales: $1.05 billion
- Estimated impact on labor income: $450 million
- Estimated number of additional job-years of employment: 7,700
- Estimated increase in state sales, use, gross receipts, and lodging taxes: $32.9 million

- Estimated increase in local sales, use, gross receipts, and lodging taxes: $1.7 million
- Estimated increase in state individual income tax: $5.9 million

Operations and maintenance stage (annually beginning 2017):

- Estimated increase in production and sales: $8.92 million
- Estimated increase in labor income: $4.42 million
- Estimated number of additional full-time jobs: 25
- Estimated additional state sales, use, gross receipts, and lodging taxes: $113,000
- Estimated additional local sales, use, gross receipts, and lodging taxes: $45,000
- Estimated additional state individual income tax: $84,000
- Estimated additional local property taxes: about $13.4 million

During the construction stage of the DAPL Project, North Dakota landowners will receive about $57 million in "easement and damages" payments to reimburse them for the restoration and use of their land. Once in operation, the DAPL Project will generate about $13.4 million in local property taxes.

7.4 USE OF CITIZEN COORDINATING COMMITTEES

No citizen coordinating committee is anticipated.

7.5 COMMITMENT OF PORTION OF TRANSMITTED PRODUCT FOR USE IN STATE

The DAPL Project is proposed to transport unrefined product that is produced in North Dakota to U.S. markets where it can be refined for multiple uses. Dakota Access provides transportation services based on contractual agreements between producing and refining companies, Dakota Access does not determine where the product does and does not get used.

7.6 LABOR RELATIONS

Dakota Access is an Equal Opportunity Employer and has a long-standing commitment to the safety of people, the environment, and their property and assets. Their safety commitment extends to their employees, the general public, and their contractors. Dakota Access' preference is to recruit local candidates to fill permanent positions to operate and maintain the project. This is often accomplished by advertising in local papers and attending area job fairs to attract employees. Using local personnel is part of Dakota Access' commitment to being a good neighbor along the DAPL Project and in the area.

7.7 APPLICANT'S POLICIES AND COMMITMENTS TO LIMIT THE ENVIRONMENTAL IMPACT OF ITS FACILITIES

Dakota Access is committed to public safety and the protection of the environment. Dakota Access will operate their facilities to meet or exceed all applicable federal, state, and local environmental laws, regulations, and standards. These laws, regulations, and standards are designed to safeguard the environment, human health, wildlife, and natural resources. Additionally, pipelines are regulated by the PHMSA. Dakota Access continually seeks ways to enhance their operations in the areas of environmental and resource protection and conservation.

7.8 COORDINATION OF FACILITIES

Dakota Access does not currently own or operate any facilities within North Dakota. However the DAPL Project has been designed to take advantage of existing facilities to the maximum extent practicable and site new facilities to avoid and minimize human and environmental impacts to the greatest extent possible as described below in Section 7.10.

7.9 MONITORING IMPACTS

The DAPL Project will be built and maintained in accordance with industry and governmental requirements and standards, and they often exceed applicable requirements and standards. Regular aerial patrol of the permanent ROW will also be carried out via airplane or helicopter a minimum of 26 times per year (an average of every 14 days). Foot patrols will take place on the same schedule in areas where aerial patrol is not feasible. Dakota Access will monitor the new pipe-fabrication process and inspect and factory test the pipe to assure quality and adherence to standards. The DAPL Project will be designed to withstand pressures over and above its normal operating pressure. All new pipe is inspected and integrity-tested at the factory and transported per federal regulations and industry standards. The new pipeline will be plant-coated with external fusion-bonded epoxy in conjunction with cathodic protection to prevent corrosion. Coating in the controlled environment of a pipe plant greatly enhances the efficacy of the process; coating is re-inspected in the field and applied to all pipe welds.

Dakota Access will participate as an industry leader in applying pipeline-control and leak-detection systems along with advanced computerized control, monitoring, and detection equipment along the pipeline network. Dakota Access will use advanced Supervisory Control and Data Acquisition (SCADA) systems that will place sensing devices along the DAPL Project to constantly monitor and track the pressure, temperature, density, and flow of liquid petroleum under transport and display each movement's status to operators in the Operations Control Center. The Operations Control Center will employ modern pipeline-monitoring and control technology to safely operate the DAPL Project once placed in-service. Information will flow to and from the Operations Control Center and system facilities actively transporting liquids on a continual 24 hour basis. This will be achieved using extensive telecommunications facilities. Through these systems, operators can maintain its pipelines within established operating parameters and can remotely shut down pump stations and isolate pipeline segments at mainline valves when abnormal conditions are observed or if safety parameters are exceeded.

A subsystem of SCADA known as Computational Pipeline Monitoring System (CPM) has the ability to analyze deviations in the flow of liquids through the pipelines, thus improving the operators' ability to identify leaks and other abnormal operating conditions. CPM will be used on the new pipeline as one of several leak-detection capabilities. Strict operations procedures will be prepared to direct the Control Center operators' actions in both normal and abnormal operations to reduce the risk of a release. Such systems and procedures are part of an extensive effort to maintain safe operations. Regular aerial patrol of the permanent ROW will also be carried out via airplane or helicopter a minimum of 26 times per year (an average of every 14 days). Detailed maintenance programs, regular inspections, regular employee training, and comprehensive public awareness and education efforts also combine to reduce the risk of a release.

As required by federal law, a Facility Response Plan (FRP) will be developed and implemented to address pre-planning, equipment staging, notifications, and release containment procedures in the event of an inadvertent pipeline release. The FRP for the DAPL Project is currently in the development phase. Communication and coordination with local and county emergency responders, emergency medical technicians (EMT), police, sheriff, and fire departments will be conducted during the development of the FRP. A copy of the FRP will be provided to all interested stakeholders prior to operations. The following paragraphs summarize the type of information contained within the FRP.

Prompt and effective response during an emergency is accomplished by being prepared for any type of incident. Staff regularly plan and train for reasonably foreseeable (including worst-case) emergency situations in accordance with the processes and procedures identified in the FRP. In addition, pre-emergency preparedness includes the consideration and maintenance of local area worst-case discharge volume calculations, High Consequence Area (HCA) and control point maps, and cooperative and mutual aid relationships that are outlined in the FRP.

Additionally, the FRP presents detailed information regarding the following:

- The number and locations of staff as well as their qualifications and credentials for emergency response actions and pre-emergency preparedness;
- State and Federal Agencies contact information;
- Oil Spill Removal Organizations and other response contractor contact information;
- Local and county first responders, including EMT, police, sheriff, and fire departments, who have been contacted and trained in emergency response issues related to the pipeline;
- A description of the outreach program used to apprise local first responders of DAPL Project status and developments to ensure that they are optimally prepared and current in emergency response preparation;
- Emergency standards and tactics to be used specific to various types of emergencies, including product containment, recovery, and cleanup for releases on land, in wetlands, in rivers and lakes, and in sensitive areas;
- Type, quantity, and locations of equipment and supplies that will be available for emergency response actions; and
- Maximum response times for incidents.

PHMSA requires regulated pipeline operators to prepare and maintain a documented Integrity Management Program (IMP) for pipeline system components which could affect HCAs in the event of a pipeline release. The requirements of the IMP are provided in 49 CFR §195.452 which is commonly referred to as the HCA Rule. DAPL Project staff will annually review and update its FRP and files these updates with the PHMSA.

Throughout each year, DAPL Project staff will contact local and county emergency responders to discuss pipeline operation. These contacts include, but are not limited to, presentations, North Dakota Pipeline Association meetings, mailings, and emergency response drills. DAPL Project staff takes these opportunities to reinforce key messages, including conveying FRP and emergency contact information, project information, potential hazards, agency response capabilities, and leak recognition and response procedures.

DAPL Project staff will be in contact with first responders along the DAPL Project route that may need to respond in the event of an emergency. First responders are invited to attend emergency response drills and North Dakota Pipeline Association meetings. Additionally, DAPL Project staff will seek local input from first responders for information on levels of training, available equipment, and their familiarity with the pipeline system and the products it contains. DAPL Project staff engages first responders with respect to their capabilities to assist with public evacuation, medical assistance, and traffic control. DAPL Project staff will also assess the first responders' access to appropriate fire-fighting and earth-moving equipment. Additionally, DAPL Project staff also inquire of first responders to determine if their capabilities include hazardous materials training; hydrogen sulfide (H_2S) or crude petroleum emergency response qualifications; hazardous material spill contingency planning; familiarity with crude oil, natural gas, and natural gas liquids characteristics; and familiarity with North Dakota One-Call requirements.

The DAPL Project ROW will be patrolled and inspected by air at least every 3 weeks but not less than 26 times per year to watch for abnormal conditions or dangerous activities (e.g., unauthorized excavation along the pipelines). DAPL Project staff will also conduct public education and outreach programs concerning public awareness of pipelines and pipeline-safety matters. The DAPL Project will be marked with signage and warnings, per federal regulations, at road and highway crossings, railroad crossings, navigable rivers, and other locations to alert the public to the presence of underground pipelines and to provide information, contact numbers, and emergency data.

Pipeline workers and contractors performing critical tasks are qualified under the Occupational Safety and Health Administration safety standards and PHMSA "operator qualification" rules and are subjected to federal drug and alcohol testing requirements.

7.10 USING EXISTING AND PROPOSED RIGHTS-OF-WAY AND CORRIDORS

Dakota Access' preference for route selection is to collocate and run parallel with existing infrastructure (e.g., pipelines, utility corridors, railway, etc.) to the extent practicable. Table 7.10-1 provides a summary of the mileage and percentage in which the pipeline would be collocated. Tables 3.1.5-1 and 3.1.5-2 (see Exhibit H) indicate the locations in which the Supply Line and Mainline would be collocated, the types of infrastructure with which collocation occurs, and the approximate mileage.

Table 7.10-1
Summary of Greenfield & Collocation – North Dakota

Line	Miles Collocated	Miles Greenfield (%)
Supply Line	88	60
Mainline	57	153
TOTAL	145	213

7.11 OTHER EXISTING OR PROPOSED TRANSMISSION FACILITIES

Following the construction of the DAPL Project, Dakota Access does not have plans for any new tankage or pipeline systems in North Dakota.

8.0 CRITERIA

8.1 EXCLUSION AREAS

8.1.1 DESIGNATED OR REGISTERED NATIONAL: PARKS, SITES, MONUMENTS, WILDERNESS

According to digital data from the National Park Service and U.S. Forest Service, there are no national parks, national memorial parks, national historic sites and landmarks, national wilderness areas, or national monuments located within the environmental survey corridor. At its closest, the DAPL Project is half mile east of the Little Missouri National Grasslands in McKenzie County near milepost 10.5 of the Mainline. As such, there will be no direct impacts to national parks, sites, monuments, or wilderness.

8.1.2 DESIGNATED OR REGISTERED STATE: PARKS, SITES, MONUMENTS, ARCHAEOLOGICAL SITES, NATURE PRESERVES

There are no designated or registered state parks, sites, monuments, or nature preserves along the project route. There are state historic sites and state archaeological sites within the environmental survey corridor. See Section 5.5 of this Application for a more detailed discussion on previously identified cultural resources, the project specific field investigations, and agency correspondence.

8.1.3 COUNTY PARKS AND RECREATIONAL AREAS, MUNICIPAL PARKS, PARKS OWNED OR ADMINISTERED BY OTHER GOVERNMENTAL SUBDIVISIONS

There are no county parks and recreational areas, municipal parks, parks owned or administered by other governmental subdivisions crossed by the route.

8.1.4 AREAS OF CRITICAL HABITAT

A desktop analysis was conducted with respect to USFWS-designated critical habitat. Critical habitat is defined as a specific geographic area that is essential to the conservation of a threatened or endangered species that may require special management and protection.[54] The only critical habitat within the 1-mile study area is that of the piping plover. Specific locations of critical habitat within the environmental survey corridor are shown in Exhibits A.2-A.4.

Designated critical habitat for the piping plover, a threatened species, occurs in all seven counties in which the DAPL Project crosses (Mountrail, Williams, McKenzie, Dunn, Mercer, Morton, and Emmons Counties, North Dakota). Piping plover critical habitat is present along the two Missouri River crossings, near mileposts 96.8 of the Supply Line and 168 of the Mainline, respectively, in Williams, McKenzie, Morton, and Emmons counties. Results of the piping plover habitat assessment are documented in the 2014 Piping Plover Habitat Assessment Report (see Exhibits A.4 and E.1). Direct impacts to critical habitat will be avoided as a result of the pipeline being installed beneath the Missouri River at both crossings. Measures to ensure no adverse effects to the species will be coordinated with the USFWS.

[54] USFWS. 2014a. Endangered Species, Critical Habitat - What is it?. http://www.fws.gov/midwest/endangered/saving/CriticalHabitatFactSheet.html Accessed October 23, 2014.

Results of the habitat assessment will be documented in the applicable Habitat Assessment Report (see Exhibits A.4 and E.2). Dakota Access will also use the data presented in the report to evaluate potential impacts and to develop appropriate conservation measures as necessary in future discussions with the USFWS.

8.1.5 AREAS WHERE UNIQUE OR RARE SPECIES WOULD BE IRREVERSIBLY DAMAGED

There are no areas where animal or plant species unique or rare in North Dakota would be irreversibly damaged (see Section 5.0).

8.1.6 AREAS WITHIN 1,200 FEET OF ICBM FACILITY

Avoidance of intercontinental ballistic missile (ICBM) facilities was accounted for during routing and field proofing information. As confirmation, the U.S. Department of Defense, U.S. Air Force Cable Affairs (USAF Cable Affairs) office was contacted on November 12, 2014, to determine whether the DAPL Project would be within 1,200 feet of the geographic center of an ICBM launch or launch control facility. The USAF Cable Affairs office responded on November 19, 2014, stating that the DAPL Project is not within 1,200 feet of any ICBM launch or launch control facility and that it is not within a restrictive easement of such features.

The Cable Affairs office stated that the DAPL Project will cross three underground cables associated with their facilities. No buried splices for a cable occurs within 50 feet of the DAPL Project area. Requirements that the cables are crossed at a minimum of a 30 degree angle and a minimum separation of 12 inches will be provided. A minimum of 2 days' notice will be provided by the construction contractor to Cable Affairs though the North Dakota One-Call system prior to the crossing. A Cable Affairs staff will be onsite during the excavation in the area of the cable.

8.1.7 AREAS WITHIN 30 FEET OF DIRECT LINE OF ICBM LAUNCH FACILITIES

The U.S. Department of Defense, USAF Cable Affairs office was contacted on November 12, 2014, to determine whether the DAPL Project route would be within 30 feet on either side of a direct line between an ICBM or launch control facility. The USAF Cable Affairs office responded on November 19, 2014, stating that the DAPL Project is not within 30 feet of direct line of an ICBM launch facility.

8.2 AVOIDANCE AREAS

8.2.1 DESIGNATED OR REGISTERED NATIONAL: HISTORIC DISTRICTS, WILDLIFE AREAS, WILD, SCENIC, OR RECREATIONAL RIVERS, WILDLIFE REFUGES, GRASSLANDS

No designated or registered national historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands are crossed by the study corridor, survey corridor, or route.

8.2.2 DESIGNATED OR REGISTERED STATE: WILD, SCENIC, RECREATIONAL RIVERS, GAME REFUGES, GAME MANAGEMENT AREAS, FOREST MANAGEMENT LANDS, GRASSLANDS

No designated or registered state wild or recreational rivers, game refuges, game management and management areas, forests, forest management lands, or grasslands are crossed by the corridor or route.

The DAPL Project will cross the Little Missouri River which is designated as a State Scenic River. The Little Missouri River is 274 miles in length and flows generally west to east in the vicinity of the Project. Dakota Access will avoid crossing within any State Recreation Area or within either the Little Missouri National Grassland or Theodore Roosevelt National Park. Construction at this location is to occur in the late fall/earlier winter when site seeing along the river is reduced. Once installed, the underground the pipeline is not visible. The river crossing block valves required by the US Department of Transportation regulations will be set back away from the current river bank to avoid and minimize any impacts to the view shed from the river surface.

8.2.3 HISTORICAL RESOURCES NOT SPECIFICALLY DESIGNATED AS EXCLUSION OR AVOIDANCE AREAS

See Section 5.1.

8.2.4 GEOLOGICALLY UNSTABLE AREAS

The DAPL Project route in North Dakota traverses terrain that overall is geologically stable. An analysis of the potential geologic hazards was completed. The potential seismic hazard was assessed by evaluating the seismic ground motion risk illustrated as a USGS Peak Ground Acceleration Map representing a 2 percent chance of being exceeded within a 50 year period, expressed in percent of gravitational acceleration (g).[55] This indicates that the DAPL Project lies entirely within a region where the peak ground acceleration with a 2 percent chance of being exceeded in 50 years has a value between 2 and 4 percent g. Ground movement from an earthquake of this magnitude may cause a light perceived shaking but is not expected to cause any structural damage. The low seismic hazard of the DAPL Project area is further corroborated by the relatively low number of earthquakes that have historically occurred in North Dakota.[56] None of these earthquake centers were within a mile of the DAPL Project.

Landslide potential along the route was evaluated using regional coverage prepared by the USGS that illustrates the relative magnitude of landslide incidence and susceptibility.[57] Table 8.2.4-1 summarizes the acreages of landslide potential crossed by the 1-mile wide study area. The vast majority of the area crossed by the pipeline and associated facilities was determined to have moderate susceptibility for landslides. Relatively small areas were found to be highly susceptible to landslides or determined to occur in high-incidence areas. The remainder of the study area with landslide potential occurs in areas of low to moderate landslide incidence (pertains to up to 15 percent of the area involved). Landslide activity is more likely to occur in areas underlain by shale and other fine grain rocks and surficial deposits.[58]

---

[55] U.S. Geological Survey. 2014. North Dakota 2014 Seismic Hazard Map. USGS Earthquake Hazards Program. http://earthquake.usgs.gov/earthquakes/states/north_dakota/hazards.php. Accessed November 4, 2014.

[56] North Dakota GIS Hub Data Portal. 2010. Earthquake Locations. https://apps.nd.gov/hubdataportal/srv/en/main.home. Accessed November 8, 2014.

[57] Godt, J.W., 1997. Digital Compilation of Landslide Overview Map of the Conterminous United States. USGS Open-File Report 97-289. USGS Landslide Hazards Program. http://landslides.usgs.gov/hazards/nationalmap/ Accessed November 7, 2014.

[58] GeoEngineers. 2014. Preliminary Geology and Geologic Hazards Evaluation. ETC Dakota Access Pipeline. p. 28.

[59] North Dakota GIS Hub Data Portal. 2014. North Dakota GIS. https://apps.nd.gov/hubdataportal/srv/en/main.home. Accessed November 2014.

Table 8.2.4-1 Landslide Potential Within 1-Mile-Wide Study Area								
Segment	County	Total Acres	Open Water	Low Incidence	Moderate Incidence	High Incidence	Moderate Susceptibility	High Susceptibility
		Area Crossed (Acres)						
Supply Line	Mountrail	15,132.1	0	15,126.0	606.2	0	0	0
	Williams	48,813.9	0	0	394.9	0	48,419.0	0
	McKenzie	33,414.0	0	0	0	0	33,414.0	0
Subtotal		97,828.1	0	15,126.0	1,001.1	0	81,833.0	0
Mainline	McKenzie	6,718.0	0	0	0	0	6,718.0	0
	Dunn	33,133.2	0	0	0	0	33,133.2	0
	Mercer	18,020.1	0	0	0	0	18,020.1	0
	Morton	46,262.3	124.3	7,117.0	0	807.9	35,356.3	2,856.8
	Emmons	29,282.0	391.5	2,158.3	0	914.6	25,817.7	0
Subtotal		133,415.6	515.8	9,275.3	0	1,722.5	119,045.3	2,856.8
Grand Total		231,243.7	515.8	24,401.3	1,001.1	1,722.5	200,878.3	2,856.8

Table 8.2.4-2 summarizes the acreages of landslide potential crossed by the 400-foot-wide survey corridor (see Exhibit H). Similar to the results for the study area, the land within the corridor that has potential for landslides is comprised mostly of areas classified as moderately susceptible with relatively small areas classified as highly susceptible and high-incidence with the remainder classified as low to moderate landslide incidence.

Table 8.2.4-3 summarizes the acreages of landslide potential crossed by the construction workspace. Similar to the results for the study area and survey corridor, the land within the workspace that has potential for landslides is comprised mostly of areas classified as moderately susceptible with relatively small areas classified as highly susceptible and high-incidence with the remainder classified as low to moderate landslide incidence.

Table 8.2.4-3 Landslide Potential Within the Construction Workspace								
Segment/ Name	County	Total Acres	Open Water	Low Incidence	Moderate Incidence	High Incidence	Moderate Susceptibility	High Susceptibility
		Area Crossed (Acres)						
Construction Right-of-Way								
Supply Line	Mountrail	61.3	0	60.5	0.8	0	0	0
	Williams	168.4	0	0	2.2	0	166.1	0
	McKenzie	97.0	0	0	0	0	97.0	0
Mainline	McKenzie	33.7	0	0	0	0	33.7	0
	Dunn	131.0	0	0	0	0	131.0	0
	Mercer	44.4	0	0	0	0	44.4	0
	Morton	147.2	0	17.3	0	0	113.3	13.7
	Emmons	80.6	0	5.6	0	0	69.5	0
Subtotal		763.5	0	83.4	3.0	8.4	654.9	13.7
Additional Temporary Workspace								
Supply Line	Mountrail	407.6	0	390.5	17.1	0	0	0
	Williams	1,331.6	0	0	11.0	0	1,320.6	0
	McKenzie	934.7	0	0	0	0	934.7	0
Mainline	McKenzie	186.9	0	0	0	0	186.9	0
	Dunn	925.7	0	0	0	0	925.7	0
	Mercer	509.2	0	0	0	0	509.2	0
	Morton	1,306.2	2.0	205.2	0	21.1	997.6	80.3
	Emmons	823.8	7.7	61.3	0	22.6	732.1	0
Subtotal		6,425.7	9.8	657.1	28.1	43.7	5,606.8	80.3
Grand Total		**7,189.2**	**9.8**	**740.5**	**31.1**	**52.1**	**6,261.7**	**94.0**

8.2.5 AREAS WITHIN 500 FEET OF A RESIDENCE, SCHOOL, OR PLACE OF BUSINESS

None of the DAPL Project facilities are proposed to be located within 500 feet of any residence, school, or place of business. Shifts and adjustments in the route have been and will continue to be incorporated to ensure this. In the unlikely event a shift in the route would enter this exclusion zone, Dakota Access would obtain the necessary waiver from the resident.

8.2.6 RESERVOIRS AND MUNICIPAL WATER SUPPLIES

The Missouri River and its reservoirs provide water for a number of communities, the largest of which include Williston, Dickinson, and Bismarck. Table 8.2.6-1 summarizes the area of Well Head Protection Areas (WHPAs) crossed by the 1-mile wide study area, 400-foot-wide survey corridor, and construction workspace for both community and non-community water supplies (see Exhibit H).[59]

[59] North Dakota GIS Hub Data Portal. 2014. North Dakota GIS. https://apps.nd.gov/hubdataportal/srv/en/main.home. Accessed November 2014.

The 1-mile-wide study area crosses 1,506.6 acres of the Williston WHPA, which is the only community water supply that is moderately susceptible to contamination from external sources. In contrast, the study area crosses a total of 346.7 acres of WHPA area for non-community water supplies. Of this area, 133.5 acres are indicated to be moderately susceptible to contamination, of which 131.0 acres are associated with the Bakken Residence Suites.

The only community water supply WHPA crossed by the 400-foot-wide survey corridor is for the City of Williston (80.7 acres), and the only non-community water supply WHPA crossed by the corridor is for the Bakken Residence Suites (24.7 acres). Note that the alternate Trenton Original Route would cross 12.5 acres of the Williston WHPA. All of these WHPA crossings have moderate susceptibility to contamination.

The only WHPA crossed by the construction workspace is that for the City of Williston. The construction ROW would cross 29.6 acres and additional temporary workspace would encompass 6.1 acres, for a total of 35.7 acres.

8.2.7 WATER SOURCES FOR ORGANIZED RURAL WATER DISTRICTS

The DAPL Project will cross the Missouri River above Lake Sakakawea and at Lake Oahe. The Missouri River and its reservoirs serve as a water source for a number of water supply areas and rural water associations and districts, including: Western Area Water Supply; Williams Rural Water District; McKenzie County Rural Water Resource District; Southwest Pipeline Project; Missouri West Water System; South Central Regional Water District; and State Line Water Cooperative.

8.2.8 IRRIGATED LAND

Irrigated land does not apply to underground transmission facilities.

8.2.9 AREAS OF RECREATIONAL SIGNIFICANCE BUT NOT DESIGNATED EXCLUSION AREAS

Two North Dakota State designated Scenic Byways are crossed by the DAPL Project: the Killdeer Mountain Four Bears Scenic Byway and the Old Red Old Ten Scenic Byway. The Scenic Byway Program considers six different "intrinsic qualities" of a roadway's corridor character. To qualify as a Scenic Byway, a roadway corridor must possess strong characteristics that are significant to at least one of the following intrinsic qualities:

- **Scenic Quality** is the heightened visual experience from the view of natural and manmade elements of the visual environment. The characteristics of the landscape are strikingly distinct and offer a pleasing and most memorable visual experience.
- **Natural Quality** applies to those features in the visual environment that are in a relatively undisturbed state. These features may include geological formations, fossils, landforms, water bodies, vegetation, and wildlife. There may be evidence of human activity, but the natural features reveal minimal disturbances.
- **Historic Quality** encompasses legacies of the past that are distinctly associated with natural or manmade elements of the landscape that are of such historic significance they educate the viewer and stir an appreciation for the past. The historic elements may include buildings, settlement patterns, and other examples of human activity.

- **Cultural Quality** is evidence and expressions of the customs or traditions of a distinct group of people. Currently practiced cultural features include, but are not limited to, crafts, music, dance, rituals, festivals, speech, food, special events, and vernacular architecture.
- **Archeological Quality** involves physical evidence of historic or prehistoric human life or activity that is visible and capable of being inventoried and interpreted.
- **Recreational Quality** involves outdoor recreational activities directly associated with and dependent upon the other intrinsic qualities. Active and passive recreational opportunities may include downhill skiing, rafting, boating, fishing, and hiking. Driving the road itself may qualify as a pleasurable recreational experience.

The Killdeer Mountain Four Bears Scenic Byway is comprised of ND Highway 22 beginning just north of Manning, North Dakota, where it extends north to its intersection with ND Highway 23. From there, the byway commences on ND Highway 23 east to the Four Bears Bridge west of New Town as shown on the Avoidance and Exclusion Maps included in Exhibit A.2. The 64-mile long byway enters the DAPL Project's corridor approximately 12 miles north of the town of Killdeer and is within the DAPL Project's corridor for approximately 465 feet.

Old Red Old Ten Scenic Byway begins at the Mandan Depot on Main Street in Mandan, North Dakota. This byway commences west meandering north and south of Interstate 94 to Dickinson for a total length of 108 miles. The byway enters the DAPL Project's corridor approximately 31 miles west of the town of Mandan and is within the DAPL Project's corridor for approximately 405 feet.

The DAPL Project will result in only short-term visual effects related to the presence of heavy equipment, staging areas, and removal of vegetation within the construction workspace. Disturbed areas will be returned to preconstruction conditions and contours but may continue to show short-term visual disturbance until vegetation is fully reestablished. Once installed underground, the pipeline is not visible and is not expected to negatively impact any of the six above mentioned qualities. No aboveground facilities are expected to be installed within either of these areas.

8.3 SELECTION CRITERIA. IMPACT ON:

The State of North Dakota Rules specifies selection criteria considered in designating a pipeline corridor or route.[60] These criteria are used to determine whether adverse effects from the location, construction, and maintenance of the facility will be at an acceptable minimum or whether these effects will be managed and maintained at an acceptable minimum.

The selection criteria that were considered for the DAPL Project include: Agricultural Production, Family Farms and Ranches, Land Suitable for Irrigation, Surface Drainage and Groundwater Flow Patterns, Sound Sensitive Areas, Visual Effects, Extractive and Storage Resources, Wetlands, Woodlands and Wooded Areas, Communication or Electric Control Facilities, Human Health and Safety, Animal Health and Safety, and Plant Life. Potential impacts and measures to avoid and minimize these impacts, as they relate to each of the selection criteria, are discussed in the following subsections.

[60] NDR Section 69-06-08-02.3

8.3.1 AGRICULTURAL PRODUCTION

Agriculture (cultivated crops and tame/managed pasture) and livestock production (grazing on native range) are the predominant land uses comprising approximately 38 and 53 percent of the 1-mile wide study area, respectively. These values do not change substantially from the 1-mile study area to the 400-foot Corridor to the Proposed Route. Agriculture becomes a slightly larger component of the land use mix when considered at the scale of the individual Tank Terminal Facilities (see Table 8.3.1-1 in Exhibit H).

Cultivated crops are a larger component of land use for the Supply Line upstream of the Johnson Corner Tank facility when compared to the Main Line route because the glacial till plain to the north of the Missouri River/Lake Sakakawea is more favorable for agriculture when compared to the generally unglaciated area south of the Missouri River/Lake Sakakawea. Similarly, livestock grazing is the dominant land use for the Main Line south of Johnson Corner.

Based on estimates for the 2013 growing season (see Table 8.3.1-2 in Exhibit H), the dominant crops for the 1-mile study area, the 400-foot Corridor, the proposed route, and the Tank Terminal Facilities are similar, consisting of Durum, Spring and Winter wheat, followed by grazing, hay production, and corn/soybeans.

Some agricultural land is actively enrolled in various voluntary conservation programs administered by the:

- U.S. Department of Agriculture (USDA) NRC;
- USDA FSA; and
- USFWS.

The owners of these parcels receive compensation in return for placing tillable lands into non-agriculture conservation programs. Dakota Access continues to work to identify lands enrolled in USDA and USFWS programs along the route, including the CRP, Conservation Reserve Enhancement Program (CREP), GRP, WRP, and grassland and wetland easement programs. Dakota Access land agents continue to do title research and landowner communication to identify existing easements and conservation restrictions on any tracts. Dakota Access is prepared to compensate landowners for impacts to lands enrolled these or other contractual programs.

CRP and CREP Lands

The USDA FSA administers the CRP and CREP. On November 17, 2014, project specific consultations were initiated with the State FSA office and each county FSA office in which the project will be located requesting confirmation of the presence or absence of lands within these programs. To date, Dakota Access has not identified lands crossed by the route that are enrolled in these programs. On November 21, 2014, the USDA FSA responded that it is unknown whether the DAPL Project would cross lands enrolled in CRP. Although the land enrolled in CRP is privately owned, FSA has administrative responsibilities to ensure the provisions of CRP are maintained throughout the contract period. According to these provisions, land enrolled in CRP shall not have the cover disturbed during the primary nesting and brood rearing seasons (April 15 through August 1 in North Dakota), unless a waiver from the FSA is granted. For landowner privacy reasons, the USDA FSA has elected to withhold disclosing this land information to Dakota Access. Dakota Access continues to actively engage landowners along the route to determine if their land is enrolled in these programs.

GRP and WRP Lands

The USDA NRCS administers the GRP and WRP. USDA NRCS shared parcel information for lands currently enrolled in the WRP. Dakota Access has made minor route variations to avoid these lands for their recognized conservation value. No data were provided for lands enrolled in GRP. Although parcel information was obtained from NRCS enrolled in WRP, the data does not include lands in transition into these programs; therefore, Dakota Access continues to actively engage landowners along the route to determine if lands are enrolled in these programs.

USFWS Grassland and Wetland Easements

The USFWS maintains grassland and wetland easements in North Dakota for the purpose of providing habitat for wildlife as well as other functions and values provided by these features. Dakota Access has routed the pipeline to avoid all USFWS owned and managed lands including wetland and grassland conservation easements on privately owned land. On November 11, 2014, project specific consultations were initiated with the USFWS requesting confirmation of the presence or absence of lands within these programs. The USFWS responded on November 12, 2014, stating that the DAPL Project route avoids all easement interests that the USFWS currently holds.

Crop and Range Production

Generally, land suitable for cultivation within the 1-mile wide study area, regardless of whether it is actually cultivated or not, is designated as "prime farmland" or "farmland that is of statewide or local importance." The USDA NRCS has defined prime farmland and farmland that is of statewide or local importance as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops. These designations include cultivated land, pasture, woodland, and other land that is either used for food or fiber crops or are available for these uses. Urbanized land and open water are generally excluded from prime farmland and farmland that is of statewide or local importance.

Prime farmland typically contains few or no rocks; is not subject to excessive erosion; is relatively permeable to air and water; and is not subject to prolonged periods of flooding during the growing season. Soils that do not meet flooding criteria may be considered prime or important farmland if the limiting factor is mitigated (e.g., artificial drainage). NRCS defines the specific criteria for determining prime farmland.

Soils within the 1-mile Study Area, the 400-foot Corridor, the Proposed Route, and the tank terminal Facilities have similar characteristics that affect suitability for cultivation and use as managed hayland/pasture that are not consistent with a Prime farmland designation. Major features affecting soil use for agriculture are in Tables 8.3.1-3 through 8.3.1-5 (see Exhibit H). Soil Characteristics and limitations were obtained by spatial query of the State Soil Geographic Database (SSURGO2), which is the digital version of the County Soil Survey.[61] Many of these features are also considerations for constructability

[61] Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/. Accessed September 2014.

and reclamation/restoration. Values are similar for the 1-mile Study Area, the 400-foot Corridor, the Proposed Route, and the tank terminal Facilities:

- Many of the soils (approximately 41 percent) are highly erodible by water;
- The majority of the topsoil is less than 12 inches thick. Well over half the soils have less than 6 inches of topsoil;
- While half the soils have gentle to rolling slopes, between 25 to 30 percent are steep, and greater than 15 percent have average slopes greater than 15 percent;
- Between 10 and 20 percent of the soils are subject to drought conditions that can affect plant germination and growth;
- Between 30 and 50 percent of the soils have soft paralithic bedrock[62] above 60 inches in depth from the soil surface. Many of these soils have paralithic bedrock above 20 inches from the soil surface; and
- Between 10 and 15 percent of the soils crossed are affected by salinity and sodicity, which can be a management consideration for cropping, restoration, and revegetation.

Farmland of statewide importance is land that is not federally designated prime but that is important for the production of food, feed, fiber, forage, and oil seed crops as determined by the appropriate state agency or agencies based on state-specific criteria. Generally, additional farmlands of statewide importance include those that that economically produce high yields of crops and/or forage when treated and managed according to acceptable farming and ranching methods. State and local government agencies define the criteria for determining farmland that is of statewide or local importance. Farmland of Statewide Significance includes forage production under managed pasture and native grazing conditions. Between 30 and 50 percent of the soils within the 1-mile Study Area, the 400-foot Wide Corridor, and the route are Farmland of Statewide Significance. Generally, there will be no permanent impacts to prime farmland or farmland of state of statewide or local importance because the land use will not be affected post construction with the exception of above ground facilities (valves, launcher/receiver sites, tank facilities).

Prime farmland (including areas of prime farmland, if drained) and farmland that is of statewide or local importance occurs within the proposed 1-mile wide study area and along the proposed DAPL Project route. The 1-mile study area includes a minor amount of prime farmland and a larger, but still minor, amount of Farmland of Statewide Significance (see Table 8.3.1-3 in Exhibit H). Dakota Access has developed its ECP, Agricultural Impact Mitigation Plan, and Restoration and Revegetation Plans to account for soils and land use characteristics such that prime farmland and farmland of Statewide Significance would remain in these categories after restoration.

Crop and forage (tame and native pasture) production will be temporarily disrupted in cases where the construction period overlaps with the growing season. Landowners will be compensated for crop loss and reduced yields caused by construction of the DAPL Project. Deep tillage or other measures will be implemented as necessary to mitigate effects of soil compaction, and efforts will be coordinated with individual landowners at their request.

[62] Paralithic bedrock is partially weathered. Cementation, bulk density, and the organization are such that roots cannot enter, except in cracks. Paralithic bedrock can usually be excavated with backhoes and rippers and do not typically required blasting.

The effects of construction on agriculture and grazing (both tame and native pasture) would be minor and short term. The primary impact would be the loss of standing crops or unavailability of native range or hay within the construction work area for the growing seasons during which DAPL Project-related activities occur. In some cases construction can result in soil compaction; mixing of topsoil and subsoil, including introduction of rocks into the topsoil from the subsoil; erosion; the introduction of weeds; and damage to irrigation and drainage systems. These impacts may lower soil productivity and reduce crop and hay yields as well as range productivity following construction. Dakota Access plans to minimize these effects by implementing the ECP (Exhibit C.1). Some of the basic procedures are identified below:

- bury the pipeline deeper than typical tillage depths to allow continued use of the land for agriculture after construction;
- prohibit construction during periods of prolonged or heavy rainfall to minimize the potential for soil compaction;
- alleviate soil compaction caused by construction by deep tilling or chisel plowing soils (or alternative methods approved by the landowner or land management agency) where compaction has been shown to have been caused by construction;
- segregate topsoil from subsoil during excavation;
- store topsoil and subsoil in a manner that prevents mixing and return topsoil to its original horizon during backfilling;
- implement best management practices to minimize the potential for soil loss due to wind or water erosion during construction;
- compensate landowners for crop loss;
- coordinate the interruption of irrigation and drainage systems with each landowner and compensate the landowner for damages and lost production that result from interruption of irrigation and/or drainage systems;
- repair, replace, or compensate landowners where irrigation and/or drainage systems are impacted by construction; and
- compensate landowners for a permanent easement on their property.

Dakota Access has reviewed the soils and land use within the 1-mile Study Area, the 400-foot Corridor, the Proposed Supply Line and Mainline Pipeline routes, and the sites of the Tank Farm Facilities and recognizes the importance of cattle ranching on native and managed pastures in the area crossed by the route. Dakota Access has developed its ECP to facilitate successful and rapid restoration of ecological sites to near pre-construction productivity. A summary of Dakota Access' restoration process for rangeland is based on site soils, Ecological Site characteristics, previous range condition, and recommendations from state range specialists[63] and includes:

- **Standard area construction and reclamation**. Prescriptive reclamation procedures for areas that are not sensitive have been developed using existing state-specific recommendations and consultation with specialists with the NRCS and the North Dakota Agricultural Experiment Station. Non sensitive areas would have soil and landform characteristics that would not compromise an effective restoration, can be identified in the field, and would be suited to

[63] Sedivec, K., C. Piper, J. Printz, A. Wick, A. Daigh, and R Limb. 2014. Successful reclamation of Lands Disturbed by Oil and Gas Development and Infrastructure Construction. Bulletin R1728. North Dakota Extension Service and USDA NRCS. North Dakota Extension Service, North Dakota State University, Fargo ND.

most framing/ranching operations on lands relatively disturbed by farming, rotation pasture, or extensive grazing with little high maintenance management

- **Sensitive area construction and reclamation**. These areas would consist of but not be limited to steep slopes, shallow-to-bedrock soil areas with loamy/silty/sandy soils (highly erosive), saline sodic areas, droughty areas, and subirrigated situations. Reclamation starts with appropriate construction procedures: identifying areas requiring triple lift, dealing with shallow bedrock, special erosion controls, and special cover seeding specifications. Post restoration monitoring and adaptive management may be required on these areas to ensure an acceptable restoration.
- **Landowner-Specific Options**. Some areas may require site-specific reclamation plans, including detailed pre-construction soil and adjacent range assessments, specific prescriptions (plans) for the implementation of Best Management Practices, special soil handling procedures, site-specific planting plans to include a mix of warm and cool season grasses, and native forbs, etc. Dakota Access' reclamation plan for these areas is not prescriptive but a process to be implemented that is site-specific. A site-specific plan would consist of:
    1. Pre-construction evaluation of ecological sites and soils.
    2. Site specific construction and grading plans.
    3. Soil handling procedures.
    4. Soil restoration and seeding/site preparation.
    5. Monitoring.

Following construction, Dakota Access will restore the ROW to its pre-construction contours to the extent reasonably practicable and stabilize the ground until the next growing season. Planting and harvesting would be allowed to continue over the operational ROW.

Long-term impacts on prime farmland and farmland that is of statewide or local importance would be minor. Following construction, the work area would be restored to its pre-construction condition and stabilized as necessary. Permanent impacts on agricultural production would be limited to the construction of aboveground facilities, namely the tank terminals near the towns of Stanley, Ramberg, Epping, Trenton, Watford City, and Johnson Corner; additionally Mainline valves and launcher/receiver sites. Table 8.3.1-1 (Exhibit H) indicates the acreage removed from agricultural production as a result of aboveground facilities by county. Approximately 37 acres of land would be permanently removed from agricultural production.

8.3.2 FAMILY FARMS AND RANCHES

The effects of construction on family farms and ranches within the 1-mile wide study area would be minor and short term. The primary impact on family farms would be the loss of standing crops and use of the land within the work area for the seasons during which DAPL Project-related activities occur, as well as potential diminished yields for a few years following construction. Dakota Access proposes to implement mitigation measures to minimize these potential impacts as described in the ECP (Exhibit C.1).

Herbaceous rangeland suitable for livestock grazing comprises approximately 56 percent of the 1-mile wide Study Area, 400-foot Wide Corridor, and the proposed Supply Line and Mainline pipelines. The primary impact on family ranches would be temporary prohibition of livestock grazing in the construction ROW, workspace areas, and restrictions on livestock movement across the construction ROW and workspace areas during construction. Given the narrow, linear nature of the DAPL Project and

the alignment of the pipeline along property boundaries, livestock grazing reductions and livestock movement restrictions would be minor.

Long-term or permanent impacts on family farms and ranches are not anticipated. Dakota Access will acquire land in fee to build new terminal facilities, so this respective acreage would be taken out of production. Following construction, the work area would be restored and farming and ranching would be allowed to continue over the operational ROW. Landowners would be compensated for temporary loss of land use. Grazing activities would return to normal after revegetation.

8.3.3 LAND ECONOMICALLY SUITABLE FOR IRRIGATION

There are a few irrigation systems crossed by the DAPL Project. Most are associated with the floodplain of the Missouri River in and near the Buford and Trenton Irrigation District. Other isolated center-pivot irrigation systems are visible in recent aerial photography. Water may be sourced from surface ditches and rivers, or underground aquifers. Dakota Access will work with landowners to address Project location and timing with respect to irrigation systems. Dakota Access will restore and/or compensate for damages directly resulting from construction activities.

8.3.4 SURFACE DRAINAGE PATTERNS AND GROUNDWATER FLOW PATTERNS

Surface Drainage

The construction of the pipeline will not alter surface drainage patterns. Streams, swales, ditches, and other natural drains will be restored to pre-construction contours after construction is complete. The pipe will be installed to depths that will not interfere with flow or future maintenance efforts by landowners or the drainage authority.

Groundwater Flow

Groundwater occurs within the DAPL Project area in both Quaternary glacial drift/alluvium and older sedimentary bedrock aquifers. Although the bedrock aquifers tend to have a greater distribution and be more continuous than the Quaternary aquifers, the Quaternary aquifers typically provide higher yields to wells. The glacial drift aquifers are relatively thin throughout the region except where they occur in buried or present-day bedrock valleys.

In the absence of Quaternary aquifers, members of the Paleocene Fort Union Group commonly serve as the shallowest aquifer. Individual aquifer members of the Fort Union Group include, in descending order, the Sentinel Butte, Tongue River, Cannonball, and Ludlow Formations. Other bedrock aquifers of economic importance in the DAPL Project region are the late Cretaceous Hell's Creek and Fox Hills Aquifer system and the Cretaceous Dakota Group.

Groundwater in the bedrock aquifers flows towards the Missouri River and Lake Sakakawea, a regional groundwater discharge zone. The water table within phreatic aquifers, which may include both Quaternary and bedrock formations, is typically a subdued replica of the surface topography. Although groundwater flow directions may vary widely particularly within localized flow regimes, overall regional flow of groundwater in the phreatic aquifer will be toward the Missouri River.

Any construction impacts that may occur to groundwater flow would be in surficial aquifers and would be highly localized and temporary in nature. No permanent impacts to groundwater flow are expected as a result of the DAPL Project.

8.3.5 SOUND SENSITIVE LAND USES

Construction activities at any given point along the DAPL Project are expected to be short-term (2 to 4 weeks in any given area) and generally limited to daylight hours. Operation-related noise would be limited to the six tank terminal facilities where equipment is operating, tanker trucks periodically unloading crude oil at storage tanks and support vehicles, and equipment that would be used by maintenance personnel. Construction and operation of the DAPL Project is expected to comply with applicable noise requirements.

8.3.6 VISUAL EFFECT ON ADJACENT AREAS

The assessment of the DAPL Project's impacts to visual resources is based on an evaluation of the changes to the existing visual environment that would result from DAPL Project construction and operation. In determining the extent and implications of the visual changes, a number of factors were considered:

- The specific changes in the affected environment's composition, character, and any outstanding valued qualities;
- The context of the affected visual environment;
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration; and
- The numbers of viewers, their activities, and the extent to which these activities are related to the visual qualities affected by proposed changes.

The visual landscape along the study corridor consists primarily of open grassland and agricultural fields with occasional rural structures, roadways, and power lines. Trees and taller vegetation occur infrequently as shelter belts or as riparian vegetation near drainage areas. The landscape is very open with long sightlines and few vertical features to break the horizon.

Aboveground facilities constructed as part of the DAPL Project include the tank terminals, two launcher/receiver facilities, and mainline valves. The six tanks terminals are constructed near other industrial features, so they are not incongruous with the local visual settings. The mainline valves are minimal in stature consisting of a footprint of 50 feet wide by 75 feet long along the ROW. The launcher/receiver facilities will be approximately 200 feet wide and 400 feet long. These facilities will be located in remote rural areas along roadways for accessibility and will also be fenced in; therefore they will be visible only to those who pass directly by it. Other than these permanent aboveground facilities, the DAPL Project will result in only short-term visual effects related to the presence of heavy equipment, staging areas, and removal of vegetation within the temporary construction workspace. Disturbed areas will be reclaimed but may continue to show short-term visual disturbance within the study corridor until vegetation is fully reestablished.

8.3.7 EXTRACTIVE AND STORAGE RESOURCES

Four types of actively extractive resources were identified at various locations within the DAPL Project corridor or route: oil and gas; sand, gravel, scoria; lignite; and uranium. Impacts on future extractive development would not constitute a substantial loss of resource availability because of the narrow, linear nature of the pipeline ROW relative to the expanse of areas with resource potential.

Oil and Gas

The DAPL Project would be located within the Williston Basin. The Williston Basin is a large, intracratonic sedimentary basin that occupies parts of North Dakota, Montana, South Dakota, Saskatchewan, and Manitoba. The Mississippian-Devonian Bakken petroleum system in the basin is characterized by low-porosity and permeability reservoirs, organic-rich source rocks, and regional hydrocarbon charge.[64]

The Bakken petroleum system consists of the Bakken Formation, lower Lodgepole**,** and upper Three Forks Formations. The Mississippian-age Bakken Formation consists of three members: (1) upper shale; (2) middle silty dolostone or dolomitic siltstone and sandstone; and (3) lower shale. The middle dolomite, known as the middle Bakken, is the principal oil reservoir and is on average 10,500 to 11,000 feet deep. Both the upper and lower shales are organic-rich marine shales and also serve as source rocks for the middle Bakken. The Devonian-age Three Forks Formation is also targeted. It is composed of shaley dolomite, typically found at 10,600 to 11,000 feet.[65]

According to the North Dakota Department of Mineral Resources, Oil and Gas Division, a total of 8 wells are located within the 400 foot corridor. Efforts will be made to identify all wells along the route. The layout of construction ROW will be such that no wells will be within the DAPL Project footprint. Additional protection measures will be coordinated with the owner/operators of the facilities to ensure avoidance of negative impacts. Access to operating facilities will be coordinated with respective owners as needed.

Overall, the DAPL Project does not pose a hindrance for accessing oil and gas resources. With the current ability to drill horizontal laterals or directionally drill wells to access oil and gas resources, the proposed pipeline would not restrict access to those resources. Because oil and gas are produced at depths considerably deeper than the excavation depths required for the DAPL Project, construction of the DAPL Project would not be expected to affect the oil and natural gas producing formations. Construction-related impacts would be limited to surface or near-surface facilities, which could temporarily disrupt production until repairs are made.

---

[64] Kringstad, J. 2014. Energy Development and Transmission Committee. North Dakota Pipeline Authority. https://ndpipelines.files.wordpress.com/2012/04/kringstad-edt-7-8-2014.pdf.

[65] Kringstad, J. 2014. Energy Development and Transmission Committee. North Dakota Pipeline Authority. https://ndpipelines.files.wordpress.com/2012/04/kringstad-edt-7-8-2014.pdf.

Sand, Gravel, and Scoria

Aggregate (sand and gravel) is present from localized deposits in floodplains or glacial deposits. Scoria, mined for use in road construction, is formed from the in-situ burning of coal seams that result in baked rock. Based on review of available aerial photography two gravel pits are located within the survey area. Dakota Access is working with applicable owners and operators to determine pipeline placement in these areas.

It may be necessary to obtain construction sand and gravel from local, existing commercial sources for use as pipe padding, road base, or surface facility pads. These demands for sand and gravel would aid in short term economics of the local gravel pits but will not affect the long-term availability of construction materials in the area.

Lignite

The DAPL Project area is located in the Fort Union Coal region in which lignite coal occurs in the Sentinel Butte Formation of the Fort Union Group. Based on review of North Dakota Geological Survey Lignite Reserves 100k map sheets, the DAPL Project route does cross mapped areas identified as an economically minable coal deposit. The largest sources in the vicinity of the DAPL Project are located north of Williston and northeast of Dunn Center. According to North Dakota Public Service Commission records, most of the mines in the region began operation in the early 1900s and closed in the 1930s. No impacts to lignite economically minable coal deposits will occur.

Uranium

The volcanic-rich White River and Arikaree strata have been identified as likely source rocks for uranium found in carbonaceous rock and sandstones in Hell Creek to Golden Valley strata in southwestern North Dakota. These rocks are primarily found from the Killdeer Mountains south to Medicine Pole Hills (Murphy 2007). Discovery of uraniferous lignite in western North Dakota by federal scientists led several energy companies to explore for uranium in this area during the 1950s and 1960s. Often mining of lignite was accomplished by stripping the overburden, burning the lignite in place, and shipping the ash off-site for further refinement or shipping the lignite to a reduction facility southeast of Belfield, North Dakota. Between 9 and 15 mines produced 85,138 tons of ore yielding 592,288 pounds of U_3O_8 "yellow cake" (Murphy 2007). Generally there was no reclamation and only a few of the mined areas have been reclaimed under the North Dakota Abandoned Mine Lands program. As of January 2007, a shortfall in supply and an increased price for U_3O_8 has resulted in renewed interest in North Dakota's uranium deposits. The DAPL Project is 3.5 miles northeast of the nearest identified uranium source described above. No impacts to uranium resources are anticipated to result from the DAPL Project.

Impacts on future mineral development would not constitute a substantial loss of mineral resource or mineral availability because of the narrow, linear nature of the pipeline ROW relative to the expanse of areas with mineral resource potential. The pipeline trench would be backfilled with materials derived from the trench excavation, and it will be necessary to obtain some construction sand and gravel from local, existing commercial sources for use as pipe padding, road base, or surface facility pads. These demands for sand and gravel would aid in short term economics of the local gravel pits but will not affect the long-term availability of construction materials in the area.

8.3.8 WETLANDS, WOODLANDS, AND WOODED AREAS

Dakota Access is conducting field surveys of wetlands and waterbodies within the environmental survey corridor. A wetland and waterbody summary for surveys completed in 2014 is provided as Exhibit D. Field surveys for wetlands and waterbodies within the environmental survey corridor will continue in 2015 after the growing season begins. Following completion of the assessments, results of the delineations will be summarized and submitted as a supplemental filing. According to U.S. Geological Survey (USGS) land use classification, wetlands and waterbodies comprise approximately 1.9 percent of the land along the DAPL Project route. Table 8.3.8-1 presents the acres of wetlands crossed by the environmental survey corridor in each county, based on field verified data (where available), paired with desktop delineated and National Wetlands Inventory (NWI) data. Of the reported wetland acreage within the environmental survey corridor, field delineations account for 60 percent, NWI data accounts for 34 percent, and partial field delineation accounts for 6 percent. The locations of wetlands and waterbodies are indicated on maps in Exhibit A.4.

Table 8.3.8-1
Wetlands Crossed by the DAPL Project Survey Corridor

County	Approximate Area (acres)
Dunn	19.9
Emmons	33.3
McKenzie	24.0
Mercer	19.7
Morton	31.6
Mountrail	83.5
Williams	58.6
Total	**270.5**

Pipeline construction through wetlands will be conducted in accordance with applicable regulatory requirements. Dakota Access will obtain any necessary permits for wetland crossings. No wetland will be permanently drained or filled as part of the DAPL Project, and effects on wetlands are expected to be short-term and minor. Dakota Access will restore the area as close to its previous state and naturally functioning condition as possible.

During construction in unsaturated wetlands, topsoil will be segregated from the trench line and spoil pile area to preserve natural sources of seed and rootstock. During trenching in wetlands, water quality of the inundated wetlands adjacent to the construction area could be temporarily affected due to the suspension of sediments and organic matter. Silt fence or similar appropriate measures will be installed as needed to avoid or minimize this effect. Although wetland vegetation will be cleared for pipeline construction, these areas will be allowed to revegetate to their pre-construction structure and function. After the trench is backfilled, the topsoil will be replaced to facilitate the natural revegetation process in unsaturated wetlands. Where necessary to protect wetland hydrology, trench plugs may be installed at the entry and exit points of the feature to prevent the trench as serving as a conduit for subsurface water to migrate from its natural feature. Additional restoration measures will be implemented as specified in applicable permits.

Additionally, other methods to minimize impacts to aquatic resources will be implemented, such as open cut, flume, dam and pump, bore, and HDD. The HDD method will be utilized at certain waterbody crossings and other sensitive areas as indicated in Table 8.3.8-2. The HDD method allows for construction

across a waterbody or road crossing without the excavation of a trench, by drilling a hole significantly below conventional pipeline depth, and pulling the pipeline through the pre-drilled hole. Dakota Access has prepared an HDD Contingency Plan (Exhibit C.4) and will use HDDs at several locations to avoid direct impacts to resources, such as wetlands and waterbodies, and/or to avoid areas in which constructability by conventional means is not feasible.

Table 8.3.8-2
Horizontal Directional Drill Locations

County	Project Location	Approximate Milepost	Feature Crossed	Approximate HDD Length
Mountrail	Supply Line	3	Little Knife River	1750
Williams	Supply Line	54.7	Railroad	3920
Williams	Supply Line	79.7	US Highway 2 and 50th Street	900
Williams	Supply Line	92.3	Highway 1804 & Railroad	1260
Williams/McKenzie	Supply Line	96.5	Missouri River	2800
McKenzie	Supply Line	110.5	Highway 85	1650
McKenzie	Supply Line	128.5	Cherry Creek	2075
McKenzie	Supply Line	130.5	Highway 85	1850
Dunn	Mainline	16.5	Little Missouri River	1760
Mercer	Mainline	73	Knife River	1300
Morton	Mainline	107.3	North Pacific Railroad	1325
Morton	Mainline	126.5	Heart River	1300
Morton/Emmons	Mainline	163.5	Lake Oahe	7800

No fertilizer, lime, or mulch would be applied in wetlands. Operational impacts would be limited to occasional mowing/vegetation maintenance along the ROW and no long-term adverse effects on wetland function or value are anticipated.

USGS National Land Cover Data Set (2001) identified a small amount of wooded areas within the 1-mile wide study area. A tree and shrub inventory will be completed in 2015. Impacts to wooded areas are avoided and minimized. The DAPL Project was designed to collocate the pipeline with existing pipeline, utility, road, and railroad corridor to the extent practicable. Additionally, the six proposed tank terminals were collocated within or adjacent to existing facilities where possible. With the exception of aboveground facilities, land use within the ROW will be returned to previous conditions following construction. In areas where woodlands are present, the DAPL Project will create or expand a non-wooded corridor where the permanent ROW will need to be maintained in an herbaceous state free of trees to comply with federal regulations and to facilitate the safety and inspection of the pipeline. Tree and shrub inventories will determine the number of wooded acres that would be converted to open land.

8.3.9 RADIO AND TV RECEPTION AND OTHER COMMUNICATION OR ELECTRONIC FACILITIES

Based on review of publically available information, no radio and TV reception and other communication or electronic facilities are located within the study area. Therefore, no impacts on these facilities are anticipated as a result of the DAPL Project.

8.3.10 HUMAN HEALTH AND SAFETY

Dakota Access and its parent company, Energy Transfer, form a part of Energy Transfer Partners, which owns and operates approximately 71,000 miles of natural gas, crude, and refined product pipelines and associated appurtenances throughout much of the United States. The company is experienced in managing construction and operating pipeline systems that protect public health and safety.

During construction, residences and businesses in proximity to construction activities will be exposed to short-term increases in construction-related noise and dust. The construction ROW, access roads, and spoil piles near residential and commercial areas will be watered down as needed to control fugitive dust during construction. Following construction, measures to stabilize and re-vegetate the ROW will be taken promptly to minimize further dust emissions. Heavy construction equipment required for pipeline installation will generate unavoidable short term increases in sound levels. Increases in noise levels due to equipment operation will be limited to the period of active construction and will primarily be avoided during night-time hours (10pm – 7am). Twenty-four hour construction activities are generally limited to completing tasks that commenced during the day and where ceasing to complete could jeopardize the installation. Largely this can apply to some phases of horizontal directional drills, various bores, and occasional aboveground facility construction.

The U.S. Department of Transportation's pipeline standards are published in Parts 194 and 195 of Title 49 of the Code of Federal Regulations. The regulations are intended to ensure adequate protection of the public and to prevent accidents and failures. Part 195 addresses petroleum pipeline safety issues, specifying material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion. Part 194 prescribes emergency planning to prepare for prompt shutdown, containment, and cleanup to minimize the effects of a pipeline release, should one occur. Dakota Access will design, construct, test, operate, and maintain the DAPL Project in accordance with or exceedance of all applicable laws and standards, including the installation of clamps of sonic meters at all launcher sites for leak detection.

Actual installation of the pipeline and all construction and testing records (as described in Section 2.20) will be subject to inspection. All pipe installed along the DAPL Project will be externally coated with cathodic protection to resist corrosion. Once installed, internal inspections will be conducted on the pipeline at regular intervals using in-line inspection technology. The pipeline will undergo hydrostatic testing above maximum allowable operating pressure to ensure its integrity and will be placed into service only after successful completion and commissioning to verify compliance with all construction standards and requirements.

Dakota Access will ensure that an extensive public education and outreach program is developed to promote public awareness of pipelines and pipeline safety. Proper signage and warnings at road and highway crossings, railroad crossings, navigable rivers, and other locations to alert the public to the presence of underground lines and to provide information, contact numbers, and emergency data.

8.3.11 ANIMAL HEALTH AND SAFETY

Construction activity within the study corridor will have temporary impacts on domestic animals and wildlife. The clearing of vegetation will temporarily reduce cover, nesting, and foraging habitat for some species, temporarily displacing individuals that used these areas. Following reclamation, it is likely that wildlife will be reestablished within the study corridor to preconstruction levels.

Pipeline trenching activities and associated spoil piles may result in a short-term barrier restricting the movement of some wildlife species (typically 2 to 4 weeks at any one area). Except for short-term interruptions during construction, existing public roads, farm lanes, and livestock crossings will be kept open, providing crossing access for wildlife. During construction, temporary fencing, as necessary will be used to keep livestock and wildlife away from the pipeline trench and the length of time the trench will be left open will be minimized.

8.3.12 PLANT LIFE

Vegetation clearing during construction is anticipated to have a short-term impact to plant life. During pipeline construction, vegetation will be removed from within the construction ROW, as well as temporary workspace areas. Vegetation will be cleared only to the extent necessary to facilitate access for construction, operation, and maintenance of the pipeline. Many areas will require permanent revegetation, where Dakota Access will specify appropriate native seed mixes, application, timing, such that recommendations of federal, state, and landowner requests are taken into account. Additional mitigations are discussed in the ECP (see Exhibit C.1).

Operational impacts to vegetation will be limited to maintenance of the permanent easement where necessary to comply with federally mandated safety requirements.

National Grasslands

National Grassland areas have been avoided along the DAPL Project route. The route does not intersect any National Grassland areas within the 400-foot environmental survey corridor or within the 1-mile study area (see Exhibit A.2).

Noxious Weeds

The Federal Noxious Weed Act of 1974 established a federal program to control the spread of noxious weeds. The United States Secretary of Agriculture was given the authority to declare plants "Noxious Weeds" and limit the interstate spread of such plants without a permit. Two federally listed noxious weeds (*Cuscuta L.* and *Orobanche ludoviciana*) occur in North Dakota. The North Dakota Department of Agriculture (NDDA) lists 11 species of noxious weed and invasive species including absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), diffuse knapweed (*Centaurea diffusa*), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*), purple loosestrife (*Lythrum salicaria*), Russian knapweed (*Acroptilon repens*), spotted knapweed (*Centaurea maculosa*), Yellow toadflax (*Linaria vulgaris*), dalmatian toadflax (*Linaria dalmatica*), and saltcedar (*Tamarix chinensis*).

In addition to the NDDA noxious weed and invasive species list, localized weed boards within each county manage noxious weeds and invasive species. Mountrail and McKenzie Counties have additional noxious and invasive species indicated within Table 8.3.11-1.

Table 8.3.11-1 Additional Noxious Weeds and Invasive Species by County		
County	**Common Name**	**Scientific Name**
Mountrail	Common tansy Houndstongue	*Tanacetum vulgare* *Cynoglossum officinale*
McKenzie	Black henbane Common burdock Houndstongue Halogeton Baby's breath	*Hyoscyamus niger* *Arctium minus* *Cynoglossum officinale* *Halogeton glomeratus* *Gypsophila paniculata*

Management of noxious weeds will be detailed in the ECP (see Exhibit C.1).

9.0 OTHER FACTORS CONSIDERED

Several additional factors were considered including the items listed below.

9.1 EFFECTS ON PUBLIC HEALTH, WELFARE, NATURAL RESOURCES, AND THE ENVIRONMENT

Refer to Sections 5.0, 7.3, 7.7, 7.9, 8.2, and 8.3.

9.2 TRANSMISSION TECHNOLOGIES AND SYSTEMS DESIGNED TO MINIMIZED ADVERSE ENVIRONMENTAL EFFECTS

The DAPL Project design is consistent with existing pipeline technologies. A variety of measures will be taken to avoid, minimize, or mitigate impacts to sensitive resources, including implementing trenchless construction (HDD, bores), narrowing ROW widths, rerouting and route deviations, etc. Trenchless techniques avoid the need for open cut trenches, thereby minimizing environmental impacts and eliminating ground-level surface hazards in sensitive areas along the route. Best management practices will be used to minimize impacts from clearing, trenching, and reclamation of the construction ROW. Potential impacts to cultural resource sites and other environmentally sensitive areas will be either avoided through rerouting, HDD/bore, or by protecting sites during construction.

Dakota Access' ECP (Exhibit C.1) describes current construction techniques and mitigation measures that will be employed to minimize the effects of construction on environmental resources. Mitigation measures are also discussed in Section 10 of this application. The DAPL Project does not include new energy conversion or transmission technologies that are expressly designed to minimize adverse environmental effects.

9.3 POTENTIAL FOR BENEFICIAL USES OF WASTE ENERGY FROM A PROPOSED ENERGY CONVERSION FACILITY

The DAPL Project does not involve new energy conversion facilities; as such, the potential for beneficial uses of waste energy from a proposed energy conversion facility does not apply to the DAPL Project.

9.4 UNAVOIDABLE ADVERSE DIRECT AND INDIRECT ENVIRONMENTAL EFFECTS

Unavoidable adverse direct and indirect environment effects will be temporary and short-term and will be minimized to the extent practicable. The DAPL Project will collocate and run parallel to new and existing infrastructure (e.g., pipelines, utility corridors, railway, etc.) to the extent possible (see Table 3.1.5-1), and Dakota Access will implement measures to mitigate potential impacts to resources such as vegetation, wildlife, agricultural, transportation, and noise levels. Impact minimization methods are described in Section 8.0; refer to Section 10.0 for a complete description of mitigation measures.

9.5 CORRIDOR OR ROUTE ALTERNATIVES DEVELOPED DURING THE HEARING THAT MINIMIZE ADVERSE EFFECTS

A description of the alternatives analyzed in the design of the DAPL Project is presented in Section 3.1 of this application. With the initiation of field activities, including landowner engagement, stakeholder outreach, civil surveys, environmental surveys, and constructability analysis, among others, data are

collected that result in the decision to research the possibility of conducting a reroute. Reroutes of varying lengths and for a variety of reasons were employed to minimize adverse effects to sensitive areas. Dakota Access is continuing to adjust the route based on additional constructability concerns and necessary feature avoidance.

A total of 9 major reroutes involving approximately 69 miles and 53 minor reroutes encompassing approximately 69 miles have been executed to date. Criteria considered for the major and minor reroutes are presented in Section 3.1.5.

9.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES IF DESIGNATED

The DAPL Project was designed to collocate the pipeline within existing linear infrastructure (i.e. pipeline, utility, road, and railroad corridor) to the extent practicable. Additionally, the six proposed tank terminals were located within, adjacent, or near to existing facilities where possible. This design minimizes irreversible or irretrievable commitments of natural resources due to conversion of greenfield to industrial uses and optimizing existing fragmentation. Generally all areas impacted by pipeline construction (except for above ground facilities) would return to previous land use. Long-term vegetation impacts result from converting wooded areas to herbaceous/scrub shrub areas to comply with federal pipeline regulations, ensure safety and integrity of the pipeline, and facilitate routing aerial inspections. Approximately 90 acres (or 1.25 percent of the total construction area) of wooded areas along the pipeline would be converted to open land.

The DAPL Project will include the development of six tank terminals. An irreversible commitment of natural resources would occur where existing terminals would be expanded and new terminals would be constructed. Table 9.6-1 below shows the area of land required for each tank terminal and the acreage that would be converted from agricultural, open space, herbaceous rangeland, and/or wetlands to industrial use.

Table 9.6-1
Land Converted for Tank Terminal Facilities

Facility	Total Acreage
Stanley Tank Terminal	25
Alternate Stanley Tank Terminal	21
Ramberg Tank Terminal	21
Alternate 1 Ramberg Tank Terminal	37
Alternate 2 Ramberg Tank Terminal	6
Epping Tank Terminal	20
Alternate Epping Terminal	7
Trenton Tank Terminal	20
Alternate Trenton Tank Terminal	10
Watford City Tank Terminal	32
Johnson Corner Tank Terminal	50

In areas where the DAPL Project will be collocated with other linear or industrial features, irreversible or irretrievable commitments of natural resources will be minimized. Overall, significant change in vegetative communities is not anticipated.

Other irreversible or irretrievable commitments of natural resources includes the use of steel to manufacture the pipeline, tank, and ancillary facilities and use of petroleum fuel for construction equipment.

9.7 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE FACILITY

Estimated total spending for construction of the DAPL Project is $3.78 billion. Of this, the estimated total investment in North Dakota will be $1.41 billion representing the largest portion of spending in the four states that the pipeline will cross. This estimate is inclusive of the tank terminal facilities and construction of the pipelines, pumping stations, architectural, engineering and real estate services, easement payments, mitigation payments, and other support services. Impacts will be distributed throughout construction between 2015 and 2016 and throughout operations and maintenance annually starting in 2017.

Construction outputs for the DAPL Project include employment, labor income, and production spending. The outputs are the value of industry production. Economic modeling indicates that the DAPL Project is estimated to fill 90 percent of direct jobs by residents in the four state region. Employment from construction of the DAPL Project is expected to result in 7,688 job years. Table 9.7-1 shows these impacts.

Table 9.7-1
Construction Output Impacts in North Dakota

Impact Type	Employment (job years)	Labor Income ($millions)	Production ($millions)
Direct Effect	4,565	306.14	655.93
Indirect Effect	1,157	66.93	168.20
Induced Effect	1,966	77.27	228.73
Total Effect	7,688	450.34	1,052.86

Source: Strategic Economics Group 2014

North Dakota imposes taxes on sales, use, gross receipts and lodging, and individual income. Local governments have the authority to impose taxes on the same tax bases; however, most unincorporated areas do not impose local option sales taxes. The DAPL Project will contribute directly and indirectly to tax bases at the state and local levels. Table 9.7-2 summarizes the tax impacts of construction and operations and maintenance.

Table 9.7-2 Tax Impacts of Construction and Operations & Maintenance		
	Construction (2015-2016)	**Operations & Maintenance (annually beginning in 2017)**
State sales, use, gross receipts, and lodging taxes	$32.9 million	$113,000
Local sales, use, gross receipts, and lodging taxes	$1.7 million	$45,000
State individual income tax	$5.9 million	$84,000
Local property tax	—	$13.4 million
Source: Strategic Economics Group 2014		

The spending associated with the DAPL Project will have direct and indirect economic impacts during construction as demonstrated in Table 9.7-3.

Table 9.7-3 Local Purchase Percentage (share of in-state purchases)		
Component	**Region**	**North Dakota**
PIPELINES		
Construction and labor and land clearing	99.8	100.0
Construction	99.7	100.0
Pipe	26.0	2.0
Valves, fittings, bends, etc.	22.9	0.5
ROW agents	81.9	48.2
Engineering & environmental	87.6	68.4
Construction and mill inspection	75.5	75.2
Easements and damages	100.0	100.0
PUMPING STATIONS AND TANKS		
Construction labor and land clearing	99.8	100.0
Tankage	20.4	11.0
Pumping station materials & equipment	13.1	4.6
Control and monitoring system	10.6	4.5
Construction equipment	92.6	100.0
Easements and damages	100.0	100.0
Source: Strategic Economics Group 2014		

9.8 EXISTING PLANS FOR OTHER DEVELOPMENTS (STATE, LOCAL, AND PRIVATE) IN THE VICINITY

Development occurring in the vicinity of the proposed DAPL Project includes Enbridge's Sandpiper Project and a project sponsored by Hiland Crude, LLC. The Sandpiper Project includes the installation of new pump station facilities and tankage at the Stanley Station site in Stanley, North Dakota. Hiland Crude's plans include converting an existing 197-mile long crude oil gathering line into a transmission line that crosses Williams, McKenzie, and Mountrail counties.

The city of Williston, North Dakota, is projected to grow an additional 2,700 acres by 2020 and an additional 5,300 by 2050. The northwest portion of the city is thought to be the most readily available growth area for the city. New housing and commercial developments, along with a new Williston airport, required a major reroute of the DAPL Project.

Watford City has also experienced rapid development. The recent construction of a major bypass of Watford City to alleviate traffic concerns and to accommodate future residential and commercial development also led to a major reroute of the DAPL Project.

9.9 RECYCLING OF CONVERSION BYPRODUCTS AND EFFLUENTS

Recycling of conversion byproducts and effluents is not applicable to this type of project.

9.10 POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

Dakota Access is committed to avoidance, minimization, and mitigation process for environmental impacts and has routed and designed the DAPL Project accordingly. Dakota Access' Ten Year Plan implements the following objectives:

- Protection of the environment is an integral element in the conduct of Dakota Access business.
- Dakota Access will ensure adverse environmental effects are minimized through careful planning, implementation of effective protection measures, and monitoring of company activities.
- Dakota Access will comply with all government standards and regulations through the implementation of internal rules and procedures for environmental protection that will be consistent with industry codes and guidelines.
- Dakota Access will minimize consequences of emergency events by ensuring prompt and effective response.
- Dakota Access will provide the appropriate training to ensure employees understand their responsibility to protect the environment.
- Dakota Access employees and contractors must follow company environmental rules and procedures and must carry out work in an environmentally responsible manner at all times.
- Dakota Access will provide the public and government with relevant information regarding planned activities and will actively respond to their concerns.
- Damage to the environment resulting from Dakota Access employees' actions or actions of its contractors will be repaired in a timely and efficient manner.
- Environmental research will be encouraged, supported, and undertaken to improve Dakota Access' environmental protection and reclamation procedures.

Further, the DAPL Project has been sited and designed in consideration of current and projected future crude oil development in the Williston Basin. The DAPL Project facilities have been located to take advantage of existing infrastructure including electrical power production facilities to the extent possible. The DAPL Project is designed and will be operated in a manner that meets or exceeds state and federal engineering, safety, and operational design standards.

Dakota Access examined system efficiencies, energy requirements to transport product, and capital (i.e., pipe, tanks, and related facilities) needs in the design of the DAPL Project. These considerations included sizing the pipe diameter to meet targeted annual capacity requirements and potential to need additional pipeline and related facilities in the future to expand its capacity.

The DAPL Project was designed to provide the most efficient and cost-effective use of added capital costs while meeting the current and future transportation requirements of the Bakken and Three Forks region.

9.11 ENERGY CONSERVATION THROUGH LOCATION, PROCESS, AND DESIGN

Energy conservation is a priority for Dakota Access, and Dakota Access is committed to managing the energy costs, including the cost of energy usage, in the operations of the DAPL Project.

9.12 USE OF A PRIMARY ENERGY SOURCE OR RAW MATERIAL LOCATED WITHIN THE STATE

The DAPL Project will provide the capacity to transport light sweet crude oil produced in North Dakota to major refining markets in the Midwest and Gulf Coast.

9.13 NON-RELOCATION OF RESIDENTS

No residents will be relocated as a result of the DAPL Project.

9.14 DEDICATION OF AN AREA ADJACENT TO THE FACILITY FOR LAND USE SUCH AS RECREATION, AGRICULTURE, OR WILDLIFE MANAGEMENT

Dakota Access does not own property adjacent to the proposed DAPL Project suitable for recreation, agricultural, or wildlife management purposes. The current land use of properties adjacent to the DAPL Project is agricultural/range land (see Exhibit A).

The DAPL Project will result in the development of a buried pipeline, tank facilities, and other industrial type ancillary facilities. Land being acquired for the DAPL Project is largely only that necessary to construct and operate. No areas are proposed for dedication. It is likely that any land purchased in excess of that required for an aboveground facility could be leased for agricultural uses.

9.15 SECONDARY USES OF APPROPRIATE ASSOCIATED FACILITIES FOR RECREATION AND THE ENHANCEMENT OF WILDLIFE

The DAPL Project will result in the development of a buried pipeline, tank facilities, and other industrial type ancillary facilities. As such, these developments are not typically suitable for recreational or wildlife application.

9.16 PROBLEMS RAISED BY FEDERAL AGENCIES, OTHER STATE AGENCIES, AND LOCAL ENTITIES

Section 6.0 summarizes the consultations that have taken place to date. Dakota Access is actively working with federal, state, and local agencies and will address problems that are raised.

9.17 TEN YEAR PLAN

Dakota Access' Ten Year Plan is located in Exhibit I.

10.0 MITIGATION

10.1 MEASURES TO PRESERVE THE HUMAN ENVIRONMENT

Dakota Access has developed an ECP as its mitigation measures to minimize impacts from the DAPL Project (see Exhibit C.1). This plan provides a detailed description of the guidelines and mitigation measures that will be implemented during construction and includes the following components:

- General Mitigation Measures
- BMPs
- Stream and River Crossings
- Wetland Crossings
- Highway, Road, and Rail Crossings
- Construction Dewatering
- Water Appropriation
- Revegetation and Monitoring
- Winter Construction
- Waste Management

Other plans being developed for the DAPL Project include the Stormwater Pollution Prevention Plan; HDD Contingency Plan; Spill Prevention, Containment, and Control Measures Plan; and the Blasting Plan.

To further ensure compliance with permits, plans, obligations, and commitments, Dakota Access will have full-time environmental inspectors to monitor construction and compliance.

Dakota Access will require its construction contractor to clean up any personal litter, bottles, and paper deposited by ROW preparation and construction crews on a daily basis. Waste and scrap that is the product of pipeline construction will be removed and disposed of in accordance with applicable regulations before construction is completed in compliance with local regulatory requirements.

To the extent practicable, Dakota Access will minimize noise and dust resulting from construction near residential areas.

The DAPL Project route crosses 394 roads, including 46 private or commercial roads, 316 county and city roads, 13 state roads, and 6 federal roads. The pipeline also crosses 3 railroads. Paved roads and railroad crossings will be bored; therefore, use of these facilities will not be disrupted as a result of the DAPL Project. Gravel roads will be open cut or bored. Open cutting a road will temporarily close it to traffic; however, the road network throughout the 1-mile wide study area is sufficient that suitable alternative routes are readily available to prevent any significant delays in traffic. Further, the trench can be plated to allow for traffic crossing when construction is not active (i.e. after the end of the work day).

Dakota Access will obtain applicable permits prior to conducting road crossings. Temporary signs will be posted at each crossing as appropriate to alert motorists of construction activity. Paved roads and railroads will be bored which will minimize interference with traffic flow caused by construction activities.

10.2 MEASURES TO PROTECT TERRAIN AND GEOLOGICAL RESOURCES

Dakota Access will restore the area affected by pipeline construction to pre-construction conditions to the extent practicable. Restoration will be compatible with the safe operation, maintenance, and inspection of the pipeline.

Adequate and appropriate BMPs will be employed to maintain the stability of slopes along the ROW.

10.3 MEASURES TO PROTECT SOILS

Pipeline construction activities such as clearing, grading, trench excavation, and backfilling, as well as the movement of construction equipment along the ROW may result in impacts on soil resources. Clearing removes protective cover and exposes soil to the effects of wind and precipitation, which may increase the potential for soil erosion and movement of sediments into sensitive environmental areas. Grading and equipment traffic may compact soil, reducing porosity and percolation rates, which could result in increased runoff potential. Trench excavation and backfilling could lead to a mixing of topsoil and subsoil and may introduce rocks to the soil surface from deeper soil horizons.

Dakota Access will minimize or avoid these impacts on soils by implementing the mitigation measures described in the DAPL Project's ECP (see Exhibit C.1). The ECP will be included in contract documents and enforced as such throughout the DAPL Project.

Temporary erosion and sedimentation control measures may include installation of silt fence, straw bales, slope breakers, trench breakers, erosion control fabric, and mulch.

To minimize potential impacts on soil productivity, topsoil will be segregated during trench excavation in agricultural land, unsaturated wetlands, and if applicable, other areas where soil productivity is an important consideration. Unless otherwise requested by the landowner, topsoil in cropland will be removed to a maximum depth of 12 inches from the trench and spoil storage area and stored separately from the trench spoil. After the trench is backfilled, topsoil will be returned to its approximate original location in the soil horizon.

Compaction of agricultural soils will be minimized by restricting construction activities during periods of prolonged rainfall. Where unacceptable levels of compaction occur in agricultural lands, a chisel plow or other deep tillage equipment will be utilized to loosen the soil during restoration.

Dakota Access will retain environmental inspectors to monitor the contractor's compliance with applicable requirements to protect soil resources during construction of the DAPL Project.

Dakota Access is developing a Contaminated Soils Sites Management Plan that will be utilized to address issues from prior contamination if encountered during construction and set forth proper containment and handling protocols. Dakota Access will provide the Contaminated Soils Sites Management Plan to the Commission as a supplemental filing prior to construction.

10.4 MEASURES TO PROTECT VEGETATION AND WILDLIFE

Dakota Access will clear the ROW to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the DAPL Project. Clearing of herbaceous vegetation during construction is anticipated to result in a short-term impact. Active revegetation measures and rapid colonization by annual and perennial herbaceous species in the disturbed areas will restore most vegetative cover within the first growing season.

In areas that require permanent revegetation, Dakota Access will specify appropriate seed mixes, application rates, and seeding dates, taking into account recommendations of appropriate state and federal agencies and landowner requests. In non-agricultural areas, vegetation cleared from additional temporary workspace will be allowed to revegetate after construction depending on arrangements with the landowner. Consequently, significant changes in cover types are not anticipated. Revegetation will allow wildlife species to return to the area after construction is completed.

Temporary revegetation measures may also be required to quickly establish ground cover to minimize the potential for soil erosion and noxious weeds to establish. A temporary seed mix will be applied in these situations, again taking into consideration land management agency recommendations and landowner request. The ECP (see Exhibit C.1) contains more details regarding temporary revegetation.

After completion of waterbody crossings, Dakota Access will stabilize and revegetate disturbed stream banks in accordance with the ECP and requirements of applicable state or federal permits. When constructing in wetland areas without standing water, up to 1 foot of topsoil (organic layer) will be stripped from the trench line and stockpiled separately from trench spoil to preserve the native seed stock. In standing water wetlands, soil segregation is not typically practical; however, the contractor will attempt to segregate as much of the top layer as possible based on site/saturation conditions.

At stream approaches, the contractor will leave an approximate 20-foot buffer (typically from the Ordinary High Water Mark) of undisturbed herbaceous vegetation on all stream banks during initial clearing, except where grading is needed for bridge installation, or where restricted by applicable regulations and/or permit conditions (such as impaired waterways).

Dakota Access will take appropriate precautions to protect livestock and crops affected by construction. Operation of the DAPL Project is not anticipated to significantly affect terrestrial wildlife, fisheries resources, or other aquatic species. Shelter belts and trees will be protected and restored by Dakota Access to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the pipeline.

10.5 MEASURES TO PROTECT LAND USE

Dakota Access will obtain and comply with applicable county permits and zoning and land use regulations. Permits may include, but are not limited to, grade and fill permits, ditch crossing permits, road and utility permits, and conditional use permits. Dakota Access will retain one or more environmental inspectors to monitor compliance with environmental conditions of county permits.

Dakota Access will repair surface drains and drainage tiles disturbed during ROW preparation, construction, and maintenance activities. Dakota Access will repair private roads and farm lanes damaged when moving equipment or when obtaining access to the ROW. Dakota Access will repair or replace fences and gates removed or damaged as a result of ROW preparation, construction, or maintenance activities.

In standard conditions, the trench will be excavated to an approximate depth to allow for a minimum of 3 feet of cover over the pipe as required by 49 CFR Part 195 and Dakota Access' landowner commitments.

Dakota Access will obtain applicable permits for crossing wetlands and waterbodies and for hydrostatic testing and trench dewatering. Environmental inspectors will monitor compliance with applicable waterbody and wetland protection requirements during construction of the facilities.

Dakota Access' ECP (see Exhibit C.1) describes additional mitigation measures and contains illustrations of how sediment control devices are typically installed at waterbody crossings. Additionally, Dakota Access will maintain a vegetative buffer until the actual crossing of the waterbody takes place. Temporary sediment control measures, such as silt fence installed at each crossing, will minimize the introduction of sediment into waterbodies during construction and minimize the movement of spoil and sediment from surface runoff during and after construction. Permanent erosion control measures, such as vegetation and installation of slope breakers, will effectively stabilize riparian zones. Dakota Access will stabilize stream banks disturbed during construction using methods as directed by applicable state and/or federal permits.

For open-cut crossings, "hard plugs" of soil prevent the flow of water from the waterbody into the adjacent trench and the migration of sediment from the adjacent trench into the waterbody. After the pipe is installed, the trench will be backfilled in such a manner to restore the natural contours of the waterbody to the extent practicable. Dakota Access is presently working with its Engineering Department and applicable permitting agencies to determine the best crossing methodology for each waterbody. Construction methods to be utilized for waterbody crossings are detailed in the DAPL Project's ECP (Exhibit C.1).

Wetland crossings will be conducted in accordance with applicable regulatory requirements. If construction mats or timbers are placed in wetlands to support equipment, they will be removed after construction is completed. In order to maintain surface water hydrology within wetlands, pre-construction contours will be restored and no crown will be left over the trench. If there is a potential for a wetland to be drained by trenching, trench plugs will be installed as needed at the edge of a wetland. In unsaturated wetlands, topsoil will be replaced to facilitate the natural revegetation process.

Dakota Access' ECP (see Exhibit C.1) specifies several measures to protect wetlands and waterbodies from becoming polluted with fuels or other hazardous materials during construction. This plan prohibits the storage of fuel or other hazardous materials within 100 feet of a wetland or waterbody. The ECP also specifies that equipment must be refueled at least 100 feet from waterbodies unless, due to site-specific conditions, there is no practical alternative. In that case, the contractor must implement site-specific protective measures and containment procedures described in the EPP. Contractors will be required to provide trained personnel, appropriate equipment, and materials to contain and clean up releases of fuel, lubricating oil, or other fluids or materials that may result from equipment failure when working in or near wetlands or surface waterbodies.

Water appropriations for hydrostatic testing will be conducted in accordance with applicable permits. Dakota Access will conduct trench dewatering and hydrostatic test discharges in a manner consistent with the North Dakota Pollutant Discharge Elimination System (NDPDES) General Permit NDG-070000. Dakota Access' ECP (see Exhibit C.1) describes best management practices that will be implemented to minimize off-site erosion from surface water runoff and protect water and soil resources within the 1-mile wide study area.

Much of the concern associated with the quality of the water being discharged associated with hydrostatic testing are addressed by the fact that no additives to the water are permitted unless written approval is received from Dakota Access and applicable permits authorize such additives. Environmental Inspectors will monitor permit compliance. Where appropriate, water will be discharged into an energy dissipation and/or filtering device to remove sediment and to reduce the erosive energy of the discharge.

10.6 MEASURES TO PROTECT CULTURAL RESOURCES

Dakota Access is conducting Class III inventory surveys throughout the corridor where access has been voluntarily granted. The DAPL Project survey plan has been shared with the NDSHPO. Consideration for impacts to cultural resources have occurred throughout the course of the DAPL Project. Avoidance is the preferred method of treatment for historic properties. In the event that a historic property cannot be avoided, Dakota Access will consult with the NDSHPO to mitigate adverse effects and implement appropriate treatment plans.

Dakota Access is coordinating with NDSHPO and will not submit information about the specific location of cultural sites or historic properties with this application due to the sensitive nature of the physical location of culturally/historically sites. In addition, an Unanticipated Discovery Plan (UDP) was developed (Exhibit C.6) for use during all DAPL Project construction activities that describes actions that will be taken in the event a previously unrecorded cultural resource site is discovered during construction activities.

Dakota Access has prepared its UDP, which describes the actions taken in the event a previously unrecorded paleontological or cultural resource site is discovered during construction activities, specifically calling for work to stop until the appropriate authority can be contacted.

11.0 DEVELOPMENT

11.1 DISCUSSION OF PRESENT AND FUTURE NATURAL RESOURCE DEVELOPMENT IN THE AREA

A small percentage of North Dakota is held in public ownership. Of the 45 million acres of land in the state, less than 3 million are owned in fee title by state and federal land management agencies. Most of these agencies work in cooperation with private producers in managing these lands. For example, the NDGF leases certain tracts of wildlife management areas for grazing, haying, and food plots. The USFS manages for multiple uses and the sustained yield of renewable resources such as water, forage, wildlife, and recreation, as well as industry such as oil and gas development.

As discussed in Section 8.1.1, there are no national parks, national memorial parks, national historic sites and landmarks, national wilderness areas, or national monuments located within the environmental survey corridor. There are no designated or registered state parks, sites, monuments, or nature preserves along the DAPL Project route. There are no county parks, recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions crossed by the route. At its closest point, the DAPL Project is 0.5mile east of the Little Missouri National Grasslands in McKenzie County near milepost 10.5 of the Mainline. As such, there will be no direct impacts to national parks, sites, monuments, or wilderness.

As discussed in Section 8.2.1, there are no wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands within the study corridor, survey corridor, or route. No designated or registered state wild or recreational rivers, game refuges, game management and management areas, forests, forest management lands, or grasslands are crossed by the DAPL Project corridor or route.

As discussed in Section 8.3.1, the USFWS maintains grassland and wetland easements in North Dakota. Dakota Access has routed the pipeline to avoid all USFWS owned and managed lands, including wetland and grassland conservation easements on privately owned land. The USFWS responded on November 12, 2014, stating that the DAPL Project route avoids all easement interests that the USFWS currently holds. Additionally, the USDA NRCS administers the GRP and WRP. Dakota Access has made minor route variations to avoid these lands. Dakota Access continues to actively engage landowners along the route to determine if lands are enrolled in these programs.

On December 10, 2014, the North Dakota Department of Parks and Recreation provided consultation on the DAPL Project, which identified properties enrolled in the Land and Water Conservation Fund. None of these properties are within 0.5 mile of the DAPL Project.

The land use along the pipeline route is primarily in agricultural production with a significant number of oil wells and other pipeline systems in the area. The Stanley tank terminal is comprised of and surrounded by cultivated crop land. The alternative site is tame pasture. The Ramberg tank terminal consists of cultivated cropland and both alternate sites are located within existing oil/gas development. The Epping tank terminal consists of cultivated crop land and the alternative site is within existing an oil/gas facility. The Trenton tank terminal consists of cultivated crop land and the alternative site is within an existing oil/gas facility. Watford tank terminal consists of cultivated cropland and pasture surrounded by existing oil/gas development. The Johnson Corner tank terminal consists of cultivated cropland with oil/gas development adjacent to the site. All sites are within cultivated cropland, pasture land, or lands developed in oil and gas infrastructure.

Because the DAPL Project is located within lands developed as cultivated cropland, pasture land, and existing oil/gas infrastructure, no areas within the corridor or route are likely to be developed for present or future natural resource development. Furthermore, the pipeline is a buried utility. As such, surface land use will return to preexisting conditions once the pipeline is installed.

12.0 QUALIFICATIONS OF PREPARERS

Monica Howard

Director, Environmental Sciences, Energy Transfer Partners

Degree: B.S. Land Reclamation (Biological Emphasis), University of Wisconsin-Platteville

Experience: 15 + years of experience in environmental, energy, regulatory, permitting, and compliance

Joseph Sedarski

Senior Analyst, Merjent, Inc.

Degree: B.S. Geotechnical Engineering, University of Minnesota, Twin Cities; Juris Doctor, William Mitchell College of Law

Experience: 25+ years of experience in environmental, pipeline, electric transmission, and commercial renewable energy permitting and regulatory compliance

Other Training and Licenses: Professional Engineer – Minnesota; Licensed Attorney – Minnesota

Jennifer Kamm

Senior Analyst, Merjent, Inc.

Degree: B.S. Natural Resources and Environmental Studies, University of Minnesota, Twin Cities

Experience: 10+ years of experience in environmental and regulatory permitting, oversight, and compliance

Other Training and Licenses: Certified Wetland Delineator – Minnesota

Chad Anderson

Senior Analyst, Merjent, Inc.

Degree: M.S. Water Resources Science, University of Minnesota, Twin Cities

Experience: 10+ years of experience in environmental and regulatory permitting, oversight, compliance, and project management

April Holdren

Senior Analyst, Merjent, Inc.

Degree: B.A. Environmental Policy and Planning, Alaska Pacific University

Experience: 13 years of experience in environmental and regulatory permitting, oversight, and compliance

John Seaberg

Senior Analyst, Merjent, Inc.

Degree: M.S. Geology (Hydrogeology emphasis), University of Minnesota, Twin Cities

Experience: 29 years of experience in the environmental and regulatory permitting, specializing in hydrogeology

Other Training and Licenses: Licensed Professional Geologist – Minnesota; Certified Ground Water Professional

Jim Arndt

Senior Analyst, Merjent, Inc.

Degree: Ph.D. Soil Science (Geochemistry), North Dakota State University

Experience: 30+ years of experience in technical and applied aspects of soil science and natural resource permitting in support of National Environmental Policy Act compliance on behalf of projects in the energy industry

Other Training and Licenses: Licensed Professional Soil Scientist – Minnesota & Wisconsin; Professional Soil Classifier – North Dakota; Certified Professional Soil Scientist; Certified Wetland Delineator – Minnesota; Professional Wetland Scientist

Dean Sather

Senior Analyst, Merjent, Inc.

Degree: M.A. Archaeology, University of Kansas, Lawrence

Experience: 20 years of experience in environmental and regulatory compliance

Other Training and Licenses: Licensed Archaeologist – Minnesota & North Dakota

Bruce Galer

Senior Analyst, Merjent, Inc.

Degree: B.A. Geology, University of Minnesota, Morris

Experience: 20+ years of experience in environmental and regulatory permitting, oversight, and compliance

Other Training and Licenses: Professional Geologist – Minnesota

Kristina DeName

Environmental Analyst, Merjent, Inc.

Degree: B.S. Environmental and Forest Biology, SUNY College of Environmental Science and Forestry at Syracuse University

Experience: 5 years of environmental permitting and compliance experience for civil engineering and energy-based projects throughout the United States

Andrea Sampson

Senior Analyst, Merjent, Inc.

Degree: M.S. Conservation Biology, University of Minnesota, Twin Cities

Experience: 3 years of experience in environmental and regulatory permitting, oversight, and compliance

Other Training and Licenses: Design of Construction SWPPP, University of MN Erosion and Stormwater Management Certification Program

Allison Lange Mueller

Environmental Analyst, Merjent, Inc.

Degree: M.S. Anthropology, University of Wisconsin, Milwaukee

Experience: 13 years of experience as an environmental analyst and Principal Investigator on cultural resources management component of transportation, energy, and conservation-related projects

Other Training and Licenses: Register of Professional Archaeologists

Kevin Mueller

Environmental Analyst, Merjent, Inc.

Degree: B.A. Anthropology, University of Wisconsin, Milwaukee; Graduate Certificate in Geographic Information Systems, University of Wisconsin, Milwaukee

Experience: 7 years of experience supporting, enhancing, and streamlining geospatial data and map services to help create a wide range of products and analysis for mining and energy sector related projects, including oil and gas pipelines, refined products, liquefied natural gas storage, wind energy, transmission line, and ethanol projects